

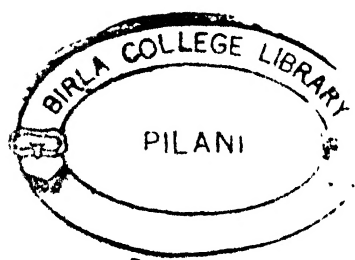
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DAIRY ACCOUNTS

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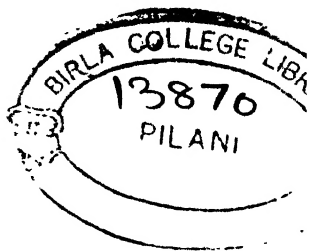
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DAIRY ACCOUNTS

BY

R. F. DALY, A.C.A.

CHIEF INTERNAL AUDITOR OF THE MILK MARKETING BOARD
AUTHOR OF "MULTIPLE SHOP ACCOUNTS"



LONDON
SIR ISAAC PITMAN & SONS, LTD.

1937

SIR ISAAC PITMAN & SONS, LTD.
PITMAN HOUSE, PARKER STREET, KINGSWAY, LONDON, W.C.2
THE PITMAN PRESS, BATH
PITMAN HOUSE, LITTLE COLLINS STREET, MELBOURNE
ASSOCIATED COMPANIES
PITMAN PUBLISHING CORPORATION
2 WEST 45TH STREET, NEW YORK
255 WEST MONROE STREET, CHICAGO
SIR ISAAC PITMAN & SONS (CANADA), LTD.
(INCORPORATING THE COMMERCIAL TEXT BOOK COMPANY)
PITMAN HOUSE, 381-383 CHURCH STREET, TORONTO

PREFACE

THE changes in the dairy trade since the war have been far-reaching. They have included developments in the methods of processing, of collective buying, of large scale enterprise, and the formation of the Milk Marketing Board. Such profound changes have had an important bearing on methods of Dairy Accounting. It is to meet the needs of those requiring a modern handbook of Dairy Accounting that this book has been written.

No system of book-keeping is suitable for all dairy businesses. In this book an attempt has been made to discuss the accounting problems which normally confront the dairyman, and to suggest the most appropriate methods of dealing with them in different sets of circumstances. To avoid lengthy descriptions of book-keeping methods, an elementary knowledge of book-keeping routine is assumed.

Numerous figures have been provided to illustrate the text. In many businesses the printing of special forms will often be unnecessary. In most cases suitable books can be obtained from dairy stationers. The rulings given in this book are intended to indicate in broad outline the information which the relative records should provide. Each business should adapt the rulings to its own particular requirements.

R. F. DALY

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DAIRY ACCOUNTS

CHAPTER I

INTRODUCTORY

ALTHOUGH the dairy industry is one of the oldest in the world (cows' milk is believed to have been used for human consumption as far back as the Hittite civilization *circa* 1000 B.C.) its present position is of rather recent growth. The outstanding feature of its modern development is the introduction of large scale organization into the distributing section of the industry. The very nature of the product with which the industry is concerned has prevented the introduction of large scale organization until recently. Milk must be fresh when it reaches the consumer, and in the absence of effective means of rapid transport the place of consumption cannot be far distant from the area of production. The considerable improvements in transport facilities in recent years have completely altered the outlook of the industry. Milk, which previously rendered large scale organization of its distribution practically impossible, is now found to have attributes which tend to encourage such development. It is a commodity for which there is a universal demand, as it is considered a necessity, and there are few households in the country where milk is not consumed. Such a universal and steady demand creates suitable conditions for the growth of large scale distributing organizations.

The dairy trade is not entirely in the hands of the large distributors by any means. These operate chiefly in the big towns. Milk is sold in every village and hamlet in the country, and here the distribution of the milk is carried on by small businesses. The activities of the small distributor are not confined to the rural areas, but extend also to the large towns where a big proportion of the trade is in his hands.

Accounting Problems

Milk has certain attributes which give a character to the dairy trade and make its organization and trading operations different

from those of any other industry. Such peculiarities are reflected in the accounting system. In some respects the character of milk simplifies the accountancy problems of the dairy trade; in others it adds to the difficulties. The problems of the dairyman are different from those of other traders and for that reason require special consideration. The dairyman is selling practically one product only, for, although he may also sell butter, eggs, cheese, and similar commodities, the sale of these is usually incidental. When one product only is being sold, greater attention can be, and is, given to quantity records; these are generally non-existent in other retail distributive trades. In a retail business which is handling two thousand different lines, e.g. in a grocery shop, it is not possible for quantity records to be maintained. But where one commodity only is being sold, quantity records of retail sales are practicable, and the accountancy control of the business can thereby be considerably strengthened. This is particularly so in the dairy trade because the product sold is of reasonable value, in proportion to its bulk, and is one that demands that adequate attention should be given to the control of quantities.

In the retail dairy trade there is another feature which renders the control of quantities more necessary than is usually the case. Unlike most other trades, the bulk of the selling is done, not on the proprietor's premises, but by delivery direct to the customer's door. Such a practice renders more difficult the personal supervision of employees, and makes more necessary the institution of proper methods of accountancy control.

The practice of selling at the customer's door creates a further accountancy problem for the retail dairyman. The actual value of each transaction is small; in fact in no other trade does the customer purchase supplies at such frequent intervals, for two deliveries daily are not unusual in many parts of the country. The small value of each transaction has led to the practice of weekly payments for milk, and this necessitates the maintaining of records of each individual transaction. It is perhaps rather paradoxical that in that section of the retail trade which has possibly the largest number of individual transactions for a given value of turnover, circumstances should necessitate the recording of each one of them. In most retail trades the number of transactions had, until the advent of the cash register, been considered far too large to permit of individual recording.

The accountancy system of all dairy businesses will have a good deal in common, because, as they are all handling milk,

they must take account of the special accountancy requirements relating to it. But beyond this, the similarity ceases. There are dairy businesses of all kinds and sizes throughout the country, and it is difficult if not impossible to prescribe an accountancy system which will be suitable for all of them. The large variations in the structure of individual concerns make it essential to adopt different methods in each particular case.

Types of Dairy Businesses

Those engaged in the dairy industry can be broadly classified into four groups, viz.—

(a) **The Dairy Farmers.** The producers sell their milk either wholesale through the agency of the Milk Marketing Board, or retail under the provisions of the Milk Marketing Board Producer-retailer's Licence. The producer-retailer plays no small part in the retail distribution of milk in the country, particularly in small towns and the rural areas where milk production is carried on close to the retail market. In some larger towns quite a considerable proportion of the retail trade is in the hands of the producer-retailers, although the trade of the individual producer-retailer is not usually large.

(b) **The Retail Distributors.** All retail distributors have problems which are similar, but the extent of their activities varies enormously. They range from the large multiple organizations, with their hundreds of shops, rounds, and distributing depots, to the small distributor with only one round.

(c) **The Wholesalers.** The wholesalers buy milk from numerous farmers and sell it to retailers, who, for various reasons, may not find it convenient to buy direct from the producer. Some wholesalers maintain depots in country districts near the source of production, where they cool and pasteurize the milk and dispatch it to their customers, the retailers in neighbouring towns, or in the large cities. Other wholesalers maintain depots in the large towns, into which they receive milk from the farmers or from their own country depots, and from which they distribute it to their customers.

(d) **The Creameries and Manufacturers.** The fourth section of the dairy trade, viz. the creameries and manufacturers, are usually to be found in the chief producing areas where supplies of milk are plentiful and the cost of transporting the milk to the factory is low. The principal manufacturing areas owe their growth not only to abundance of supplies, but in many cases to distance

from large consuming centres. In these latter circumstances, the surplus milk has no outlet other than manufacture into cheese, butter, cream, and other dairy products.

The manufacture of milk is not confined to those dairies whose principal business is manufacture. Many retail and wholesale concerns convert into milk products the surplus not required for liquid sale. Such manufacture is ancillary to their milk trade, and is in the first place usually dictated by a desire to avoid loss by waste. The separation of cream is a usual activity in such circumstances, but butter and cheese are often manufactured, and disposed of in the distributors' shops and on the rounds.

Location

Although the conditions in a special area may be more suitable for a particular class of dairy business (there is a considerable amount of manufacture carried on, for example, in Somerset, Leicestershire, and North Lancashire) it cannot be said that the types are completely localized. All kinds of dairies, i.e. retailing, producing, wholesaling, and manufacturing, are to be found in every county in the country. Further, an individual business does not necessarily specialize in one branch of the industry. Many retail concerns produce a good proportion of the milk they sell, others carry on a wholesale business, manufacturing their surplus milk. In some instances manufacturers will carry on a retail or wholesale trade in milk, and often maintain a shop or shops where milk and milk products are retailed.

Size

A further factor to be borne in mind when considering the adequacy of an accountancy system is the size of the business, and the volume of transactions to be recorded. Many of the forms and rulings described in this book may prove to be too elaborate for a small business where the proprietor himself is in direct touch with all the operations; other rulings suggested are no doubt not sufficiently detailed for mammoth organizations where the volume and complexity of the business necessitate the recording of much detailed accountancy and statistical information not usually required elsewhere. An attempt has been made to indicate what modifications are likely to arise as a result of variations in the volume of transactions; the actual details can only be framed to meet the circumstances of each individual case.

Other factors, such as the location and number of shops, depots, branches or rounds, the size of the business and the personnel engaged in the management, etc., tend to give each concern a character of its own. These conditions, as well as the nature of the accountancy information required, have to be borne in mind when designing an accountancy system for any individual business. A system of accounts is like a suit of clothes; it should be cut to individual requirements. Ready-made accountancy systems, like ready-made clothes, are not always a success. A suit of clothes cannot usually be made satisfactorily unless the measurements of the intended wearer are first obtained, and the same applies to an accountancy system. It would be useless to describe a model system of accountancy in the hope that it would be adaptable to the requirements of any individual dairy. Such a model system would be sure to prove a misfit. It is preferable to describe the different problems which are encountered and show the most suitable methods by which each can be overcome.

Certain accountancy records, e.g. records of milk purchases, will be necessary in practically all dairies; others will be necessary only in so far as the business is engaged in retailing, wholesaling, or manufacturing.

The object of this book is to describe the accountancy methods usual and suitable for the dairy industry, showing what systems should be adopted for dealing with the various problems which confront the dairyman. Each accountant or dairyman will adapt the system described to the requirements of his own particular business.

Producers

Of the many interests engaged in the handling of milk, one of the largest and most influential is that engaged in production. Milk in England is produced by about 150,000 farmers, few of whom are milking herds of great size. From the accountancy standpoint the problems of these producers are somewhat different from those of others engaged in handling milk. In the majority of cases the producer will sell his total output of milk to one buyer, and elaborate stock and other records concerning his milk will be unnecessary. The milk producer is primarily a farmer, and his accountancy problems are those which confront the farming community in general. In so far as he is selling milk by retail, the milk producer's accountancy needs will be similar to those of the small retailer. In practice, few

farmers maintain adequate systems of book-keeping. This is largely due to the small scale nature of British farming, and to the fact that as most farms are run by the proprietor, who is in close personal touch with all the transactions, the need for a proper system of accounts has not been felt in the past. This state of affairs has been aggravated by the existing taxation laws, which do not place upon the farmer the responsibility of an accurate computation of his profit for income tax purposes. For these reasons, accountancy in so far as it affects the milk producer falls outside the scope of this book.

The Accountancy System

The books of a dairy business, however elaborate or complicated they may be, are capable of being classified under a limited number of headings according to the nature of the information they are designed to record. Whether the particular business is small or large, the main functions of the book-keeping system are the same. The books or records which every dairy business needs are these—

<i>Records of Purchases</i> , including:		Intake Records, Purchase Day Books, Purchase Ledger, Milk Stock Books.
<i>Records of Disposal</i>		
<i>Sales</i>		Rounds Ledgers, Wholesale Ledgers and Day Books, Cash Received Books, Sales Summaries, Carriage Records.
<i>Manufacture</i>		Production or Process Records.
<i>Other Financial Records</i>		General Ledger, Private Ledger, Cash Books, etc.

In view of the difficulties already explained, it is not proposed to describe a model system for any particular business. Instead, each section of the accountancy system is discussed in turn, and alternative methods suggested to meet variations in circumstances. The accountancy problems relating to the purchase and handling of milk, whether the dairy be large or small, are dealt with in Chapters III and IV. Chapters V, VI, VII, and VIII discuss the book-keeping methods necessary in

connexion with the disposal of milk, whether by retail, wholesale, or by manufacture. The other financial records, and the preparation of the Accounts and Balance Sheet are referred to in Chapters IX and X. Finally, two chapters (Chapters XI and XII) are devoted to a discussion of the problems of Dairy Costing.

CHAPTER II

THE MILK MARKETING BOARD

AN important and fundamental change occurred in the dairy industry on the 6th October, 1933, when the Milk Marketing Board commenced operations. It is not within the scope of this book to discuss the economics of the dairy industry, but some appreciation of the operations of the Milk Marketing Board, and of the reasons which brought it into existence, is necessary for a satisfactory understanding of the dairy industry as it exists to-day.

The Markets for Milk

The greater proportion of the milk produced in England has in recent times been for human consumption in liquid form, the presence of a large industrial population providing an important market for the bulk of the supplies available. The demand from the large industrial centres had placed a premium on milk used for liquid consumption, and farms situated near large centres of population had an advantage in the form of steady and remunerative markets for their milk. In the agricultural areas which were well removed from the industrial towns, the milk which was surplus to liquid requirements was used for manufacture into butter, cheese, cream and other milk products. The market for milk products in England is largely if not entirely influenced by conditions abroad, as approximately 90 per cent of the butter and cheese consumed comes from the Colonies and foreign countries. The market for milk for liquid consumption is subject to comparatively little competition from abroad. Practically no liquid milk is imported, and, although the sale of foreign condensed milk does in some respects compete in the liquid market, its influence is small. So long as the difference in the price realized for milk in the two markets was approximately equivalent to the cost of carrying milk from the areas in England where large quantities were available for manufacture, to the consuming centres where the higher liquid price could be obtained, the fact that the realization price for milk was subject to two different influences, did not complicate the industry. In recent years there have been great improvements in transport facilities and a consequent reduction in the cost of carriage. This has

enabled milk from areas previously devoted to manufacture, and where production costs are low, to compete in the liquid market of the great consuming centres. Unfortunately, the reduction in carriage costs was accompanied in the years prior to 1933 by a catastrophic fall in the world realization value of milk. This and other causes resulted in the country being flooded with cheap dairy produce from abroad, and gave an added impetus to the flow of milk from the manufacturing areas into the liquid market.

Pre-scheme Conditions

The existence of a commodity which will command one price for one purpose, and a much higher price for another purpose, although unusual is not unique. But in no other case than that of milk was the sale of the product unregulated. Since 1922 milk producers as a body have negotiated for the sale of their milk to distributors and manufacturers by means of agreements drawn up by the National Farmers Union and the distributors, but the results were never entirely satisfactory, as the agreement reached was not legally binding on either side. These negotiations aimed at obtaining for each producer an equitable share of the higher price to be obtained in the liquid market. As the disparity between liquid and manufacturing value of milk increased, there was greater temptation to the buyers to send into the liquid market milk purchased at manufacturing prices. Many creameries in fact purchased their milk at a flat rate which was higher than the appropriate realization value of milk for manufacture but was below the prevailing liquid price. They were able to do this only provided they could sell a proportion of this milk into the liquid market. In order to obtain customers their sales were made at prices less than those prescribed for liquid milk. Individual producers, on the other hand, had been tempted to sell below the negotiated price in order to obtain a bigger share for themselves of the higher price applicable to liquid milk. The result was that the arrangements negotiated were not generally adhered to, and there had been severe price cutting, confusion, and disorganization in the trade.

The position of the producer became increasingly precarious and, under the conditions prevailing at the time, was bound to remain so unless the producers as a body could count on 100 per cent loyalty to any price agreements negotiated. No voluntary body can speak for all producers and any scheme was liable to be wrecked by a minority acting independently.

Formation of the Board

The Agricultural Marketing Act, 1931, gave powers to the Government, with the consent of the producers concerned, to make provisions for the regulation of any agricultural product, and in accordance with Section 15 of this Act the Minister of Agriculture appointed a commission to inquire into the marketing of milk. This commission reported that the only satisfactory way of stabilizing the industry and improving the position of the milk producer was the formation of a Board which would act for all producers and would be able to command their loyalty. The Government gave statutory enactment to the recommendations of the Commission, and the Milk Marketing Scheme, 1933, whereby the Milk Marketing Board was formed, became law on the 29th July, 1933. The scheme did not become operative until the producers had had the opportunity of voting on its provisions. A poll was taken and the scheme was accepted by a very large majority of the producers, and the Board commenced operations on 6th October, 1933.

Such, very briefly, are the circumstances which led to the formation of the Milk Marketing Board. The Board, although constituted by a Statutory Order, is not a Government body but an organization of producers through which the farmers sell their milk. The constitution and powers of the Board are such that it controls (subject to minor exceptions referred to later) every gallon of milk sold by producers. This enables the Board to see that the producers as a body obtain the full liquid price for every gallon of milk sold in the liquid market. Milk surplus to liquid requirements is sold for manufacturing purposes. While it is the Board's policy to obtain the best price for the surplus, it is able to supply manufacturers with milk at economic prices. This enables the manufacturers to carry on the production of milk products in competition with imports from abroad.

The object of the Board is to spread the loss incurred by selling surplus milk for manufacturing prices equitably over all producers. This is done by the creation of a pool into which all the proceeds of milk are paid and which is distributed among all the producers in proportion to the gallonage of milk sold by them. For the purposes of this pooling arrangement, the country is divided into eleven regions, and a separate pool is formed for each region. All the producers in any one region will receive the same price per gallon for their milk irrespective of the use to which

their milk has been put. This price is known as the "Regional Pool Price". Each producer has to bear the cost of transport on his own milk to the liquid market, so that the advantage arising from location is preserved to the producers whose farms are conveniently situated. If any producer is able to obtain from his purchaser a price higher than the contract price for liquid milk, this premium will be credited to the producer concerned. Such premiums will be obtained where a producer is supplying a high quality milk, or is performing certain additional services, such as additional or early deliveries, for which the purchaser is prepared to pay.

Wholesale and Retail Sales

The Board exercises its control over milk supplies in two ways—

(1) All wholesale sales of milk by a producer must be made under a prescribed tripartite agreement to which the Board, the producer and the purchaser are the parties. The contract provides that payment for the milk shall be made to the Board. The object of this is to enable the Board to allocate the proceeds equitably among producers. By virtue of this agreement the purchaser is charged the full liquid price (the Regional Contract Price) for all milk which he receives. If the purchaser holds a manufacturing licence from the Board, he claims from the Board the difference between the liquid price and the appropriate manufacturing price, in respect of any milk manufactured. This rebate in the price is allowed to him as a credit in his account with the Board.

(2) A producer of milk can sell milk by retail, only provided he holds a producer-retailer licence from the Milk Marketing Board. This licence is issued free on demand to all registered producers. It requires the holder to make a return to the Board each month showing the total gallonage sold retail during the month. The producer-retailer receives the proceeds of the sale of milk, as it would be impossible for the Board to be responsible for collecting payments from retail customers. In order that the producer-retailer should share with the wholesale producer the cost of disposing of surplus milk, which would otherwise undercut the retail market, the producer-retailer pays to the Board a levy on all the gallonage sold retail by him. This levy is calculated for each region by reference to the cost of manufacture borne by the wholesale producer (i.e. the difference between

the Regional Contract Price and the Regional Pool Price). In the case of the producer-retailer the levy is slightly less than the corresponding levy for wholesale producers in the same region.

There are small sales of milk both wholesale and retail (e.g. sales of "T.T." milk) which can be made by producers in certain circumstances and which are not governed by the provisions of the Milk Marketing Scheme, but these are unimportant. Once milk has been sold by a producer (i.e. by the Board) its further disposal is outside the scope of the Board's operations. A dairyman who has bought milk from a producer can re-sell this milk wholesale without a contract, or retail without a licence. The contract for the wholesale sale of milk contains provisions governing the retail price at which this milk can be re-sold. Retail sales by producers must be in accordance with the prescribed price. Therefore, although the Board is not a party to any sales after the milk has left the producer, it is still interested in the price at which it is ultimately sold to the consumer.

Milk Act, 1934

Further extensions to the operations of the Milk Marketing Board were made possible by the Milk Acts, 1934 and 1936; as a result of these Acts provision has been made for the supply of milk to school children at a reduced price. The effect of these provisions on the accountancy records of the dairy trade is discussed in Chapter VI. The Milk Acts also enable a grant to be paid to farmhouse cheesemakers. Before the passing of the Milk Act, the farmhouse cheesemakers were at a disadvantage as compared with the factory cheesemakers who were able to obtain supplies of milk at cheap manufacturing rates. The provisions concerning farmhouse cheesemakers, although important, are of little interest to the general body of the dairy trade.

From what has been said it is clear that the existence of the Milk Marketing Board has and will continue to have consequences of profound importance to the dairy trade. Every dairy business must directly or indirectly obtain its supplies from the Milk Marketing Board, on conditions which govern the price at which the milk should be re-sold. Further, the Milk Marketing Board makes provision for improvements in the quality of milk, for which purpose it has launched the Accredited Milk Producers Scheme. There is little doubt that this and other measures will serve materially to increase the consumption of liquid milk throughout the country.

Effect on Dairy Book-keeping

From an accountancy point of view, the operation of the scheme has necessitated alterations in the book-keeping methods of firms in the dairy trade. In some respects the volume of book-keeping has been reduced, notably because now payment for milk is made in total to the Milk Marketing Board instead of as previously to scores or even hundreds of farmers. On the other hand, the necessity of completing all farmers' Monthly Returns or Invoices in order that they may reach the Milk Marketing Board by the seventh of the month, imposes a burden upon many dairy businesses. Those concerns which hold manufacturing licences from the Board entitling them to claim rebates from the Board in respect of milk manufactured, are required to maintain adequate records of manufacture to which the Board's auditors have the right of access. Many manufacturers have found it necessary to make alterations in their book-keeping methods, in order to comply with the Board's requirements in this respect. The operations of the Milk Marketing Board make it necessary for forms and returns to be completed by certain sections of the trade, such as those engaged in manufacture, and the sale of milk to schools. These returns, and the general effect of the Milk Marketing Scheme on the book-keeping records of the trade, are discussed in the appropriate chapters later.

CHAPTER III

MILK INTAKE

MILK, by reason of its nature, condition of production, and perishability, is delivered to the dairy within a very short space of time after production. Deliveries to the dairy are usually made once and sometimes twice a day. If this were not done, and the dairyman did not receive fresh supplies of milk every day, he could not normally carry on this business. The fact that daily deliveries are necessary has a direct influence upon the nature of the intake records which are kept by a dairy business. It is usual in practically all cases for some form of quantity records to be adopted.

The actual type of intake records employed by any dairy business will, to a large extent, depend upon the size of the business and the source of supply of milk. To illustrate these differences it is proposed to describe two typical systems of intake records, one suitable for a reasonably large dairy, and the other for a small one.

Intake Records for a Large Dairy

The intake records of a large dairy should be designed to give the following information—

(1) A record of the quantity of all milk received, showing from whom it has been received.

(2) Financial records showing amount due for milk purchased.

Most dairies of any size obtain the bulk of their supplies direct from farmers. As each farmer's deliveries will be relatively small in proportion to the total gallonage handled, the book-keeping system provides for the recording of the receipt of milk from numerous suppliers.

THE RECEIPT OF MILK

The milk may be delivered direct to the dairy by each farmer, or it may be collected from the farm by the purchaser or his agent. As the milk is received at the dairy it is the responsibility of a yard hand to see that the correct quantity is received, and that all the milk is in good condition.

Various methods are adopted for recording the quantity received from each farmer, and the following are some of the methods most commonly used—

(a) The yard hand responsible for receiving and checking the milk calls out to the checking clerk the quantity received from each farmer. The checking clerk has before him a Milk Intake Sheet (see Fig. 1) on which he notes the quantities received. As the farmers supplying the dairy will not vary from day to day, it is usual to have the names of the farmers printed on the Intake Sheet, so as to avoid the necessity of re-writing the names each day.

(b) The yardman, as he receives the milk, notes on the back of the churn label the quantity received, and the churn labels then form an intake record. The labels are forwarded to the office for entry on the Milk Intake Sheet, or direct into the Milk Purchase Journal.

(c) A duplicate receipt is sometimes made out for all supplies, one copy being handed to the farmer delivering the milk. The receipt shows the actual milk received and accepted, and the Milk Purchase Journal is written up from the carbon copy.

(d) When milk is collected it is frequently customary for the lorry driver to issue a receipt to the farmer, as he collects the milk, any differences and shortages being noted at the time of collection. This method is essential where the quantities supplied by each farmer are small, and it is necessary to bulk supplies at the time of collection, and before the milk reaches the dairy. The total quantity handed into the dairy by the carrier is measured, and checked with the total of the receipts which he has issued to the individual farmers.

The producers sending the milk should be notified as soon as possible of all short deliveries or of any milk rejected because it is out of condition. If a receipt for the milk is issued, either at the dairy or by the carrier, this will serve as intimation to the sender, and will enable him, if he so desires, to question the difference. If receipts are not issued, a postcard intimation should be sent so that any dispute over the quantity of milk received can be settled without delay.

Milk Purchase Journal

The daily quantities of milk received from each supplier should be summarized in the Milk Purchase Journal where a total for the month or week can be obtained. Since the inception

MONTH.....193..

Fig. 2

of the Milk Marketing Board, payment for milk received from producers is made monthly. Milk received from wholesalers and others is often paid for weekly. The form of Milk Purchase Journal shown in Fig. 2 is drawn up on the basis of a monthly settlement, but can be easily modified to suit a weekly account if required.

The Milk Purchase Journal can be written up from the Milk Intake Sheets, the churn labels, or the copy milk receipts. In order that mistakes may be prevented, it is advisable to devise a system whereby the accuracy of the entries in the Milk Purchase Journal is automatically checked. Where possible the Milk Purchase Journal should be written up from the churn labels. If the Milk Intake Sheet and the Milk Purchase Journal are totalled for the day, and agreed independently, the possibility of error should have been eliminated as it is unlikely that the same mistakes will have been made in writing up both records. The same result can be obtained when only the total of each collecting round is entered on the Milk Intake Sheet. Details of the supplies from each farmer will be entered in the Milk Purchase Journal, and the total agreed with a summary of the collecting rounds.

It is advisable to have allowances for "shorts," "overs," "sour," etc., adjusted before the Milk Purchase Journal is written up, so as to prevent subsequent alterations in this book. It is possible to design the Milk Purchase Journal so that "shorts," "sour," etc., can be recorded in it, but this is not recommended. It is preferable that these differences should be clearly shown on the Milk Intake Sheet, so that they are settled at once. If left until the Milk Purchase Journal is written up, there may be an interval of several days between the occurrence of the shortage and its final agreement.

At the end of the month the total received from each supplier can be obtained by a cross addition of the appropriate line in the Milk Purchase Journal. The total so obtained should be entered in the column provided. By adding up this column a total will be obtained of all the milk received during the month, and this should be agreed with a summary of the total quantity received each day as shown by the Milk Intake Sheets. This reconciliation of the daily totals with the monthly total will prove the arithmetical accuracy of the entries in the Milk Purchase Journal.

With the adoption of a Milk Purchase Journal ruled as shown in Fig. 2, the use of a Milk Purchase Ledger can be dispensed with, and the Purchase Journal made to serve a double purpose. The total gallonage received will be calculated at the agreed contract

price, and extended in the appropriate column. Certain additions to the contract price may be necessary on account of special services rendered by the producer as provided for in the contract, and deductions will probably be made in respect of such items as collection charges, rail charges, transit risk, and churn charges. Such items will be computed and entered in the appropriate columns and the net amount payable extended. The Monthly Return or Invoice of Wholesale Sales, which has to be rendered to the Milk Marketing Board in respect of each producer, provides for the separate recording of the additions to and deductions from the contract price. As these have, therefore, to be calculated for each producer, it is advisable to record the amount of the additions and deductions in the Milk Purchase Journal. Where milk is not purchased through the Board, the gallonage received can be extended at the net price per gallon, and the amount of the additions and deductions will not be shown. It is, however, usually desirable to have a record of the amount received by way of deductions for collecting charges or the amounts paid in the form of premiums for special services. This enables, for example, the actual cost of collection to be compared with the amount received from the farmers by deduction. It is preferable therefore to show separately the additions and deductions on all milk received, particularly when these are not the same for each producer, or not the same for the whole gallonage supplied by any one producer.

Payment for Milk

Since the establishment of the Milk Marketing Board, payment for all milk purchased wholesale from producers has to be made to the Board, instead of to the producers themselves. To enable the Board to obtain information of the quantity of milk which has passed from each producer, a return of Wholesale Sales has to be completed each month, signed by both the producer and purchaser, as evidence of its accuracy, and forwarded to the Board. The return is in triplicate and one copy each is retained by the producer and purchaser, while the third should reach the offices of the Milk Marketing Board by the seventh of the following month. In practice the return is often prepared by the purchaser from the particulars shown in the Milk Purchase Journal, and sent to the producer for signature. If the producer prepares the return, the purchaser should check it with the Milk Purchase Journal before signing it and sending it to the Board.

In due course a statement of account will be received from the Milk Marketing Board showing the amount due to the Board for milk supplied. It will be appreciated that the Board cannot render a statement of the amount due in respect of any producer unless the appropriate monthly invoice has been received by the Board. If all the monthly invoices have reached the Board in good time, the statement of account received will agree with the total value of the milk purchased from producers during the month.

When a cheque is paid in settlement an entry should be made in the Milk Purchase Journal and the account with the Board for the month will be closed. When certain producers have delayed sending in their invoices the amounts due in respect of the milk supplied by them will not be shown on the first statement of account sent by the Board. In these circumstances, it is recommended that when a cheque is sent to the Board the appropriate producers' amounts covered by the payment should be marked, so that it can be seen at a glance in respect of which producers an account has not been received. When the account with the Board becomes complicated by the delay on the part of the producers in presenting their invoices, or by reason of credits due from the Board for rebates on milk manufactured or supplied to schools, it is advisable to transfer the account to a Ledger providing for the normal Ledger ruling. Except in such circumstances the ruling of a combined Milk Purchase Journal and Ledger shown in Fig. 2 will be found to be both simple and efficient.

Intake Records for the Small Dairy

Many small retail dairies, particularly in the larger towns, obtain their milk from a wholesaler, and normally have one source of supply only. The price paid to the wholesaler is more than would have been paid had the milk been purchased direct from the farmer, but the advantages of buying through a wholesaler may justify the additional cost, particularly in the case of a small dairy. The wholesaler will probably deliver the milk already pasteurized or otherwise treated. This is an advantage to the small man whose business is not sufficient to justify the outlay on plant necessary for processing the milk. Further, the wholesaler will supply the exact requirements of the dairyman and relieve him of the responsibility of balancing his supplies. If additional quantities are required to meet a sudden demand,

these can usually be obtained at short notice from a wholesale more easily than from a producer.

Other retailers, particularly in the small towns, obtain all the milk they require from one or two producers only. These also will not require an elaborate system of milk intake records similar to that described above as suitable for large dairies. Their accountancy problem is in fact a simple one.

To avoid unnecessary elaboration, the record of the intake of a small dairy should be combined with that of issues. Fig. 3 gives a ruling for a Daily Milk Stock Book or Sheet suitable for employment where, as is usual in these cases, one yardman is responsible for the receipt and issue of all milk. Provision is made in the Milk Stock Book for the recording of supplies from more than one source if necessary, or for its receipt at different times during the day. The disposal of the milk is shown on the right-hand side of the sheet, the ruling for which will depend upon the outlets through which the milk is sold.

The yardman who is responsible for the receipt and disposal of the milk will check the incoming milk with the delivery note sent by the wholesaler, and enter the quantity received in the Milk Stock Book. When the Weekly or Monthly Account is received from the wholesaler, the quantities shown will be checked with the Milk Stock Book. When checked the invoice should be entered in the Purchase Journal, from which it will be posted to the credit of the supplier in his account in the Purchase Ledger.

Purchases of Other Goods

Although the principal item purchased by dairies is milk, many buy cream, cheese, butter, and other goods for re-sale. Purchases will also be made of such items as plant, bottles, discs, stationery, equipment, repairs, etc. The account books necessary for recording purchases and expenses do not present any unusual features in a dairy business, and, in fact, vary little from the records kept for the same purpose in other trading concerns.

The records required are—

- (a) Goods Received Book.
- (b) Purchase Day Book.
- (c) Purchase Ledger.

In most trading concerns, some form of Goods Received Book or Sheet is necessary. This is important because invoices for

MILK STOCK BOOK

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193.

RECEIPTS	TOTAL		ISSUES			RETURNS			NET ISSUES	
	Galls.	Qts.	A.M.	P.M.	Total	A.M.	P.M.	Total	Galls.	Qts.
Stock brought forward										
Received :										
				</						

Fig. 3

[illegible]

Fig. 4

[illegible]

Fig. 5

purchases made will not usually be received at the same time as the supplies themselves. Unless some record is kept of what has been received, mistakes are bound to occur. Invoices will be paid twice, or paid before part or all of the supplies indicated in the invoice have been received. The form of the Goods Inwards Book for purchases other than milk is not of importance provided it is accurately kept, and records sufficient information for the purpose. Although a suitable ruling is indicated in Fig. 4, a form as detailed as this is not always necessary. Sometimes it is found practicable to dispense with a record and to rely entirely on a file of delivery notes. The Goods Received Book should be written up by the person actually responsible for receiving the goods in the dairy. When an invoice is received for supplies, it should not be entered in the Purchase Journal until the receipt of the goods which it covers has been traced in the Goods Inwards Book.

All invoices when passed should be entered in the Purchase Journal. Where supplies of milk are from a few sources only, they should be recorded in the Purchase Journal with the other goods and expenses. If milk is received from some scores of farmers it is found preferable to have a separate Purchase Journal for milk in the form already described. The Purchase Journal should be in columnar form (see Fig. 5) and should make provision for recording the quantities of the main commodities purchased, and the gallonage of milk when milk purchases are included in this book.

Postings should be made from the Purchase Journal to the credit of the various suppliers' accounts, and the totals allocated to each product or expense heading credited to the appropriate accounts in the Nominal Ledger.

In very small businesses both the Purchase Journal and the Purchase Ledger can, if necessary, be dispensed with. In that event the amounts due by the firm are not recorded, and no entry is made in the financial records until payment is made. The classification of expenditure which, in normal circumstances, is made in the Purchase Journal, will in the absence of that book be made by means of a Columnar Cash Book. The keeping of records on a cash basis in this way is not recommended except where, owing to the absence of clerical assistance, the elimination of all but essential records is desirable, and the proprietor or manager is sufficiently in touch with all transactions to make the recording of purchases unnecessary.

CHAPTER IV

MILK STOCK CONTROL

Necessity for Stock Records

THE maintenance of adequate quantity records of the stock and the movements of milk is an essential part of the accountancy system of every dairy business. The bulk of the turnover of the business is represented by milk, and losses representing only a small percentage of the gallonage handled may well amount to considerable sums financially. No dairyman can carry on his business efficiently unless he is satisfied that the whole of the milk passing through his dairy is being adequately accounted for.

The institution of a proper system of quantity records for milk does not present any serious difficulties. Milk is, for accounting purposes, homogeneous, and usually not more than two or three different kinds will be handled in any dairy. The stock control problem is further simplified because the quantity held in stock at any time is ordinarily not more than one day's supply.

The stock of a dairy is turned over each day, and for this reason milk stock control should be maintained on a daily basis. A Milk Stock Summary should be prepared each day showing what has happened to every gallon of milk received. Detailed records of intake have been discussed in Chapter III while records suitable for issues are explained in Chapters V to VIII. A summary of both intake and issues will provide the Daily Milk Stock Account or Summary. The form of this summary will depend upon the activity of the dairy and the nature of the individual movements. Various alternative rulings are discussed below—

(a) **Small Dairies.** In a small dairy it is possible to combine on one sheet detailed particulars of all milk received and dispatched. Where the dairy is small enough for all milk to be under the personal control of one foreman the form of Daily Milk Stock Book shown in Fig. 3 can be employed. As all entries for the day appear on one sheet no further summary is necessary. The foreman should be made responsible for balancing stock each day, and for seeing that all milk received is accounted for.

(b) **Large Retail Dairies.** In large dairies the volume of milk is such that no one man can record all movements. Details of intake, issues and manufacture will be prepared by those responsible

for each section of the work, and a summary prepared in the office. A suitable form of summary in these circumstances is given in Fig. 6. By preparing a summary of this kind a control is exercised over all the activities of the dairy. Any large differences shown by the summary will be inquired into without delay.

(c) **Manufacturers.** In country creameries where the bulk of the milk is being manufactured or railed in large quantities, the

DAILY MILK SUMMARY					
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	Gal	Qts.		Gal	Qts.
Opening Stock			Retail Sales (Per Rounds Issues Sheet)		
			Dairy Cash Sales		
Received (Per Milk Received Sheet)			Other Sales		
			Separated (Per Cream Dept. Return)		
			Staff		
			Wastage		
			Closing Stock		
TOTAL			TOTAL		
Checked by					

Fig. 6

number of sales of milk is usually small. Detailed records of issues are not necessary as these can be entered direct on to the Daily Summary. A usual form of Daily Milk Stock Sheet for a dairy of this kind records intake in total, and issues in detail. A specimen ruling is given in Fig. 7. Many manufacturers combine with the Daily Milk Stock Sheet, summaries of the movements of cream, butter, cheese and other products. This form of Daily Milk Stock Sheet is convenient when the head office of the business is situated away from the dairy. The combination of all particulars of production on to one return avoids confusion by reducing the number of returns which have to be made.

The types of Daily Milk Summaries described above by no means exhaust the alternatives which may be required. They have been selected as examples to show how these may vary in each individual case. The Daily Milk Summary for each business must be designed to meet individual requirements.

Stocktaking

It has been assumed in the preceding paragraphs that the stock of milk on hand will be measured each day, and this in

DAILY MILK STOCK SHEET					
. . . 193.					
	Gal.	Qts		Gal	Qts
Stock at Beginning of Day			Wholesale Credit Sales to		
Received from Farmers (Per Daily Intake Sheet)					
Other Milk Received . . .					
			Cash Sales . . .		
			Transfers to . . . Depot		
			Cheese Making . . .		
			Milk Separated		
			Wastage, etc.		
			Stock at Close of Day . . .		
TOTAL . . .			TOTAL . . .		

Fig. 7

fact is what happens in most dairies, particularly in those engaged in wholesaling or manufacturing. Some retail dairies take stock once a week only, and in that event the Milk Stock Sheet should be modified accordingly. Weekly stock-taking as opposed to daily stock-taking, is not recommended, as the possibility of errors occurring and remaining undetected is greater where the reconciliation of intake with disposals is postponed until the end of the week. The stock carried by most dairies is

small, and, except in special circumstances, there is no real reason why stock cannot be measured every day.

Wastage

The Milk Stock Summary will show each day a small difference representing the wastage which has occurred in the dairy during the day. To avoid unnecessary loss it is important that the wastage recorded should be very closely watched so that the loss from this cause is kept as low as possible. Some wastage is inevitable in every dairy, but the aim of the management should be to see that no unnecessary loss is incurred, and that excessive wastage is not used as a cloak to cover pilferage and theft.

The percentage of wastage which will occur even with the most efficient management will vary in each dairy. The following are some of the principal causes of dairy wastage—

- (a) Insufficient tipping of churn drainings.
- (b) Milk adhering to inside of piping, pasteurizing plant, coolers, etc.
- (c) Evaporation during pasteurization, particularly when a closed circuit is not employed.
- (d) Evaporation when milk is passed over an open cooler.
- (e) Shrinkage due to reduction of temperature on cooling.
- (f) Spillage and careless handling in dairy, and in connexion with bottling.
- (g) Slight overmeasure in bottles.
- (h) Loss on dismantling of plant for cleaning.
- (i) Pipe leakage.
- (j) Sourage and short measure when milk is received.

The full wastage which has occurred is not always evident from the records. If mistakes have been made in measuring either the milk received or that issued, the true wastage will not be shown. The risk of wastage being hidden in this way is greater when manufacture is carried on as there is no independent check on the milk allocated to manufacture, and for this reason tests should be made at frequent intervals to see that measurements are being correctly made.

It should be the aim of every efficient dairy manager, first to see that wastage is correctly recorded so that he is kept advised of what is actually taking place, and, secondly, to see that the wastage incurred is kept as low as possible. Care should be taken

to see that wastage is not kept low by inaccurate measurements. The hiding of wastage in this way does not eliminate it; it merely prevents steps being taken to reduce it.

Measurement by Weight

The practice has been growing in recent years of measuring the milk by weight when it reaches the dairy. There is little doubt that the weighing machine is a more reliable guide to the quantity of milk received than the churn, and the use of the weighing machine should, in theory, be more satisfactory, both to the farmer and to the purchaser. The actual weight of a gallon of milk varies with its solids content and its temperature. For practical purposes the conversion ratio of 10·32 or 10·33 lb. per gallon is found satisfactory.

CHAPTER V

THE SALE OF MILK BY RETAIL

THE retailer of milk is faced with a considerable and in many ways an unusual accounting problem. It is unusual because in few trades are the transactions so numerous, and the prevalence of credit transactions so extensive. The fact that milk will not keep means that each customer must normally receive supplies once if not twice a day, and the extensive use of credit necessitates records being kept of the amounts due from practically every customer.

Sales on Rounds

The bulk of retail sales of milk is made by carriers on rounds, who bring the milk to the customer's door. The accounting problem of milk retailers of this kind has three aspects, viz.—

1. The accounting for the milk.
2. The control over the roundsmen.
3. The recording of and control over debtors.

Although each of these three represents in itself a separate problem, in many respects they are one and the same, and many of the steps taken to solve one assist in the solution of the others. The whole problem in fact, is to see that adequate records are kept to safeguard the proprietors of the business from loss during any stage in the handling of milk for sale by retail, i.e. any loss whether of cash or milk, and whether it is by yard employees, roundsmen, or customers. For convenience in explanation and so that the various alternative methods for solving each phase of the problem can be discussed without unduly complicating the text, it is proposed to deal with each of these three divisions in a separate section.

Accounting for the Milk

Milk is not the only commodity sold by a dairyman. It has always been usual for dairy products such as cream, cheese, butter, eggs, etc., to be sold with milk. Such products are frequently produced by dairymen and are similar in nature to milk and their sale by dairymen is to be expected. In recent years there has been a large extension in the range of commodities sold by dairymen, and all kinds of tinned and

packed goods are now found in dairy shops, and with the roundsmen. The dairyman's system of book-keeping must, therefore, provide not only for the recording of transactions in milk, but also in these other commodities.

The first operation which takes place with regard to the retail sales of milk and goods on rounds is the issue of these com-

ROUNDSMAN'S MILK TICKET

ROUND		No						193		
		Milk		T T. Milk		Bottles	Crates	Cream	Butter	Goods
		Loose	r's	½'s	r's	½'s				
Issued	A M									
	P.M.									
Total Issues										
Less Returned										
Net Issues										
Shortage/ Surplus in Bookings										
Signed										

Fig. 8

modities from the dairy to the roundsman. A record of this operation is required for two reasons—

(1) To obtain a record of the total quantities issued so that a control on the stocks in the dairy can be prepared.

(2) To obtain a record of the total value issued to each man, for the purpose of maintaining a control over the cash returned by him.

The most usual form by which this information is recorded is by means of a Roundsman's Ticket (see Fig. 8). As each roundsman is issued with milk and goods, he receives a ticket showing the quantities he has received and for which he will be expected to account. This ticket is made out in duplicate, one copy remaining with the dairy, and the other being handed to the

roundsman. The copy retained by the dairy can be signed by the roundsman as a receipt for what he has received.

Where practicable, it is better for one ticket to be used for both milk and goods as shown in Fig. 8. In some dairies this is not possible as the yardman responsible for the issue of the milk does not handle the goods which are located in a separate and more convenient part of the dairy, under different control. In these cases separate tickets for milk and goods are necessary.

To simplify the work of recording and issuing, the roundsman's tickets should be prepared beforehand. This can be done in the office by a clerk who will estimate the amount of milk, cream and other commodities with which each roundsman should be issued, by reference to the records of the sales on the previous day or of the corresponding day in the previous week. Sometimes it is left to the roundsmen to estimate the quantities they will require, in which case the roundsman's ticket will be made out by the roundsman on the previous evening and presented to the yardman as an order for supplies. Such a procedure is not wholly desirable where a perishable commodity such as milk or cream is being sold, as there is a tendency for roundsmen to overstate their requirements, and loss through sourage may result. It is not desirable to restrict the issues to roundsmen in any way which may cause curtailment of sales or occasions for sale. The ascertainment of the correct quantity to issue is a matter of nice adjustment and requires to be carefully watched. If, for convenience, the roundsmen are allowed to prepare the tickets, some supervision over the quantities issued should be exercised.

Issues

The next step in the accounting is to summarize and record, in more permanent form, the total issues for the day. This may be done by the yardman himself, who will enter the quantities issued to each man on to the Milk Stock Sheet (see Fig. 3) or on to Issues Sheets (see Fig. 9). The Issues Sheets should be used when the number of rounds is too numerous to permit the details being entered direct on to the Daily Milk Stock Sheet. Normally this work is done by a clerk in the office to whom all the copy roundsman's tickets are sent. The tickets are checked in the office and any errors corrected, and the total quantities issued to each man entered on the Issues Sheets. This serves a twofold purpose—

(1) To prepare a summary of all issues so that a total Daily Milk Stock Account can be prepared.

(2) To prepare a suitable record of issues for use when the roundsmen check-in at the end of the day.

In some businesses the roundsmen may receive additional supplies after they have left the dairy. These supplies may be received from any of the following sources—

- (a) From shops.
- (b) From supporting motor vans.
- (c) From other roundsmen.

Dairy shops are often used for the purpose of replenishing roundsmen whose supplies have run short. In some businesses the whole of the supplies to the roundsmen are issued from the shops or dairy premises adjoining the shops. In such cases, each shop supplies a certain group of roundsmen and acts as an independent unit for the purpose of controlling supplies and roundsmen, and keeping the Customers Ledgers. In other businesses all the roundsmen are controlled from one centralized depot from which all supplies are issued, and the shops supply the roundsmen only in the case of an emergency.

It cannot be said that either method is definitely superior, as matters of organization of this kind must depend to a large extent on the area covered by the business. If this is reasonably compact, a central dairy is better; if a large area is covered, the distances which the roundsmen may have to travel from a central depot make centralization impracticable unless motor transport is used. The tendency is towards a centralization of rounds control, and the increased use of motor transport in the delivery of milk is making this possible. Centralization enables better and more uniform accountancy control to be exercised over the rounds, and obviates the cost of separate accommodation and staff (probably not employed to capacity) at each shop, for handling the issues of milk.

The growth of centralization of issues often goes hand in hand with a policy of replenishing the supplies of the roundsmen from motor vans at specified points in the streets. The routes of these supply vans are mapped and timed so that they make contact with the roundsmen whose areas are too far away to make it practicable for them to return to the central depot for further supplies before commencing the second delivery.

The additional issues to roundsmen, either from the vans or from shops or other roundsmen, will be accompanied by a similar ticket to that employed for issues of milk from the dairy. The

particulars of these issues will similarly be communicated to the office so that the total issues to each roundsman can be obtained.

As the roundsmen return at the end of the day they will report to the dairy, and the milk and goods which remain unsold will be returned to the foreman who will write the quantity received by him on the roundsman's ticket, or issue an additional ticket for the returns. Each roundsman, after he has received an acknowledgment of the milk and goods he has returned to the dairy, will proceed to the office where he will account for the milk and goods which he has sold.

Control Over the Roundsmen

The business of a retail dairyman is to a considerable extent in the hands of his roundsmen. Each roundsman, in respect of his own round and customers, carries out practically every function of the retailer. He frequently obtains the new customer himself, he conducts and negotiates the sale, delivers the articles sold, records the transaction in the books, and finally acts as cashier by receiving the cash. As all these operations are centred in one person, it is not possible to introduce the normal system of check employed in retail businesses, whereby the various duties are carried out by different persons. The control of roundsmen is, therefore, more difficult than is normally the case with retail traders, and for this reason the methods of control require more careful consideration.

Before going on to discuss the accountancy methods of control, some mention should be made of certain problems of administration in connexion with roundsmen. The frequent personal contact between roundsman and customer tends to put the goodwill of the business largely in the hands of roundsmen. Many customers will resent a change in the roundsman whom they regard as more responsible for their milk supplies than they do the dairy business by whom the roundsman is employed. This attitude, which is very prevalent, gives a big pull to the roundsman. Unless adequate safeguards are taken, the goodwill of the business may pass so completely into the hands of the men, that a roundsman on resignation or dismissal may be able to take with him the bulk of the customers to another dairy.

For these reasons, it is usual to have rounds supervisors or inspectors. It is their duty to check the rounds of each man, to see that the houses actually visited are those recorded in the Rounds Books and Customers Ledgers. Where roundsmen are

working a six-day week the provision of an alternative roundsman on the seventh day has a similar effect, while holiday relief duty will also serve to check the rounds. Supervisors or inspectors when they visit the customers are also able to verify that the amounts shown as owing on the Customers Ledger are in fact due.

The Rounds Book

As credit, at least until the end of the week, is usual in the retail dairy trade, it is necessary for each roundsman to make a record of practically every sale he makes. For this purpose a "Milk Carrier's Book" or Rounds Book is used (see Fig. 10). In this book the roundsman records at the time of delivery the quantity of milk, cream, or other goods which the customer receives. The illustration given provides space in the ruling for two deliveries of milk a day and for sales of "sundries." It is usual for the goods to be recorded either by some code letter, i.e. C for cream, B for butter, etc., or by their cash value. Where payments are made by customers daily, a column can be inserted under each day where the cash received can be entered, and at the end of each week a total made of both sales and cash received. Generally, however, cash is paid by the customer weekly, and one column for cash received is sufficient. Each line will represent the transactions of a separate customer, and the customer's names will be entered in the same order as deliveries are made. An alternative method is to allocate a separate page in the Rounds Book to each customer, and a separate line for each week. This method, however, is not recommended as it is rather cumbersome, and causes some delay in entering.

If a roundsman makes any cash sales during his round to persons who are not ordinarily customers, he will enter these in his Rounds Book as "Casual" sales. The Rounds Book should therefore show a full record of all sales made during the day, and the total of these should agree with the net total (i.e. issues less returns) shown as sold on the roundsman's ticket. The reconciliation between the sales shown by the Rounds Book and the net issues to the roundsman is usually made each day by the office staff to whom it is the duty of the roundsman to "book-in." In some businesses it is found convenient for roundsmen to "book-in" every second day, half the men reporting on Mondays, Wednesdays, and Fridays, and the others on Tuesdays, Thursdays and Saturdays. By this means less clerical staff is required and congestion at the office at the close of business is reduced. In

[illegible]

Fig. 10

practically every business it is customary for the roundsmen not to report to the office on Sundays, but to carry these sales forward until Monday.

Reconciliation with Issues

The procedure of "booking-in" is usually as follows: The roundsman from his Rounds Book calls out to a clerk the quantities of milk and goods which each customer has received, and these are entered by the clerk into the Customers Ledger (or Rounds Ledger). The Customers Ledger is in fact a copy of the Rounds Book retained by the office for control purposes, and to provide a permanent record of the moneys due by customers to the dairy. At the time of "booking-in" the roundsman hands to the clerk his receipt for returns and the clerk deducts these from the records of issues and arrives at the net sales. The quantities entered into the Ledger, including cash sales to casual customers, are totalled and should agree with the net sales shown by the roundsman's tickets. The reconciliation of these two totals should be made before the roundsman is allowed to leave for the day.

When loose milk is sold, it is not always possible for a complete reconciliation to be effected, as some allowance for loss in measuring, spillage, etc., is usually made. Now that the bulk of milk sold by large dairies is in bottles, this problem does not arise so frequently, and, subject to a loss for breakage, a complete reconciliation should be possible. Breakages of bottles cannot be entirely eliminated, but a strict record of all bottles reported broken by each roundsman should be kept so that comparisons can be made, and steps taken against the principal offenders. The other commodities sold do not present the same difficulty in this respect, as they are packed goods, and there should not be any loss in serving.

The reconciliation so far described relates to milk and goods only, and, if properly carried out, assures that the whole of the milk and goods issued is accurately accounted for. The roundsmen do not each day pay in the cash for all the milk and goods they sell, as probably they will have received payment for only a small proportion of the sales. The balances due from each customer must be included in any reconciliation of cash received with milk and goods issued, and as customers' accounts are balanced only weekly it is not practicable to balance the cash due from roundsmen until the end of each week.

The men may pay in some cash during the week, such as cash

received from casual sales, and this will be credited to them. The simplest way of recording these payments is to have Cash Sheets or a Receipts Cash Book printed for the six days of the week (see Fig. 11). Each line will record the cash paid in during the week by one roundsman. The totals of the vertical columns will give the total cash received from roundsmen each day, and this total, after being agreed with the amount banked, will be entered in the Main Cash Book. The total of each horizontal line will give the amount of cash paid in by each roundsman during the week.

The reconciliation each week can be made either at the foot of the Customers Ledger, or on a separate printed form, and is briefly this—

	£	s.	d.
Debts due from Customers at the beginning of the week	—	—	—
Add: Cash value of Net Issues during the week—			
Milk	—	—	—
Goods	—	—	—
	—	—	—
	£	s.	d.
Less: Cash paid in by the Roundsmen	—	—	—
Allowances (if any)	—	—	—
	—	—	—
Balance representing Debts due from Customers at the end of the week	£	—	—

This reconciliation not only checks the roundsman but also proves the accuracy of the entries in the Customers Ledger.

The system described above has assumed the existence of several roundsmen. If only one or two roundsmen are employed, the same principles apply and the same methods of control should be exercised. The rulings of the Customers Ledger and the Rounds Book will be the same, but the summaries of issues and cash (Figs. 9 and 11) will not be necessary.

Semi-Wholesale Sales

When sales are made at varying prices to different customers, e.g. semi-wholesale sales to hotels, boarding houses, etc., a further

RECEIPTS CASH BOOK

Week Ending									193
No.	Roundsman's Name	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	TOTAL	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

Fig. 11

complication arises. These sales are not to be confused with sales of milk of different qualities, e.g. "T.T.", homogenized, etc., for which the same price is received from all customers for milk of the same quality. Where the same milk is sold at different prices, it is necessary first, to take account of these reductions in price in making the weekly cash reconciliation for each roundsman, and secondly, to see that no roundsman is recording milk as sold at a semi-wholesale price, for which he has received the full retail price.

As far as possible, it is advisable to organize the business so that all wholesale and semi-wholesale sales are made on rounds specially devoted to these trades. This is not always practicable as it may require considerable crossing of routes by rounds operating in the same areas. When retail and semi-wholesale sales are made on the same round, a record of any reduced price, which certain customers are to be charged, must be made in the Customers Ledger and in the Rounds Book, so that these sales can be valued at the correct price. In preparing the reconciliation at the end of the week, the total quantities sold at reduced prices must be abstracted from the Customers Ledger, and this quantity extended at the reduced price in the summary.

To control the roundsmen with regard to these sales, careful supervision is necessary. These reduced price sales should only be made to customers which the manager has specially approved, and it should be seen that the minimum quantities which entitle the customers to the reduced prices are maintained. When the inspectors visit the rounds, they should make it a particular point of verifying that the quantities taken at the reduced prices are those which have been recorded by the roundsman.

The Recording of and Control over Debtors

As the bulk of the sales of a retail dairy business are for credit, the problem of keeping a ledger account for each credit customer is a formidable one. The type of Customers Ledger usually employed, particularly in the smaller dairies, has already been referred to and is similar in design to the Roundsman's Carrier Book (see Fig. 10). This Ledger serves the dual purpose of a Sales Journal and Ledger, and by that means the work of posting from the Journal to the Ledger is obviated. The elimination of such duplication is of course essential where so much book-keeping is necessary, and is rendered possible by the uniformity and regularity of the credit transactions.

The Customers Ledger

As has been explained, the Customers Ledger is totalled each week, and reconciled for each roundsman. The sales on all rounds should be summarized weekly to give the total sales for the week, and the weekly totals summarized in turn to give quarterly or half-yearly totals. From these a posting is made crediting sales in the General Ledger and debiting Customers Ledger Total Accounts. Cash received is posted from the Cash Book to the credit of the Customers Ledger Total Account and the balance on this account should agree with the total of the balances on the Customers Ledgers. It is a usual practice where there are sundry cash sales at the dairy, to record these each day at the foot of one of the Customers Ledgers as if they were credit sales. By this means a record is kept of them by which they are conveniently summarized with the other sales for the purpose of a total gallonage reconciliation, or a total reconciliation of sales with cash. By treating cash sales in this way, complications are eliminated from the book-keeping records as it is not necessary to have a separate record of these sales, nor to make independent provision for their inclusion in the general summaries.

In view of the importance of Customers Ledgers on account of the volume of transactions which they must record, considerable attention to their form has been given by the various well-known stationers who specialize in books for the dairy trade. Most of these rulings have been very well thought out so that the time occupied in using them is reduced to a minimum. Special rulings provide for a variety of information under each day of the week, vertical columns being provided, for example, for eggs, butter, cream, graded milk, bottles, etc. Other rulings provide for a horizontal division against each customer, the top line being for milk and the lower for cream and sundries. This particular ruling makes it easier to cross-add at the end of the week for the purpose of calculating the amount due from each customer. Other rulings shade every alternate line, making it easier to fill in the sales and other particulars on the correct line. Rulings are available which are suitable for wholesale dairies, where quantities are larger or whose customers are buying large quantities of butter, cream, and other commodities, while Customers Ledgers can be obtained which provide for the balancing to be made fortnightly and even monthly instead of weekly. Any one requiring a Milk Customers Ledger cannot do better than approach one of the Dairy Stationers, by whom he will be shown a large variety of

different rulings, and he should readily be able to select one entirely suitable for his particular requirements.

Alternative Methods

The clerical labour involved in keeping Customers Ledgers in a large dairy business is very considerable, and various systems have been devised whereby this work can be avoided. Two alternative methods are possible, both of which make the Carrier's Book serve as a substitute for the Customers Ledger—

(1) In some businesses, each roundsman has two Carrier's Books which are used for alternate weeks. While one is in use with the roundsman the other is retained in the office where it is being checked, and at each week-end the balances are carried forward from one book into the other.

(2) An alternative method is for the roundsman to have a specially designed loose-leaf Carrier's Book. This provides for the insertion of carbon paper, so that as the roundsman makes an entry a copy is taken. At the end of the week the carbon copy, which contains the quantities and cash received only, but not the names and addresses, is torn out, and returned to the office. Here it is inserted in a specially designed folder, so that the entries appear against the name of the appropriate customer. This carbon copy forms the Customers Ledger, and is checked in the office in the usual way.

Both these methods rely for their book-keeping upon the roundsmen, and to this extent are not entirely satisfactory. Roundsmen, both from their training and from the conditions under which they work, are not likely to be good book-keepers, and many mistakes, and careless entries, are likely to occur. However, given a good type of roundsman and proper supervision, the systems do work satisfactorily. The great saving resulting from their use is, of course, a very telling argument in their favour.

Control Over Debtors

The supervision of the debts outstanding in a retail dairy business calls for a good deal of care. In most businesses, the bulk of the cash for credit sales is collected by the roundsmen themselves, and care is therefore necessary to see that the whole of the amount collected is paid into the dairy. Unless a close watch is made of these debts, it would be an easy matter for roundsmen to show as owing on their books large sums which have been paid and misappropriated.

The amount of credit to be given will depend upon the class of trade, in the better residential areas longer credit being necessary than in poorer districts. Where credit extends for more than a week, provision should be made for the regular dispatch of statements or pass books to customers whose accounts are overdue. Occasionally, visits should be made by inspectors to the houses of customers whose accounts appear to be long outstanding so that the accuracy of the amount due can be verified.

The use of Milk Pass Books is not now so common as it was. The time and expense entailed in submitting a full statement of account to each customer is considerable, and is to be avoided wherever possible. Certain large customers, e.g. private hotels and others, may require a pass book for record purposes, and in these cases account books or statements must be provided. There are many suitable standard forms of Dairy Pass Books supplied by Dairy Stationers, and a special ruling should not normally be required.

CHAPTER VI

THE SALE OF MILK BY RETAIL (*Contd.*)

Shop Sales

ALTHOUGH many retail dairies have one or more retail shops, the bulk of the sales of the business are made on the rounds and at the customers' doors, and only a small proportion of customers ever visit the shop premises. Besides milk, many retail dairy businesses are selling dairy products and packed groceries on the rounds. In the shops the sales of these other goods are likely to represent a much greater proportion of the turnover than they will on the rounds themselves, because the milk sales in the shops are restricted to casual customers, and to emergency sales to regular customers. Many concerns endeavour to expand their sales of other goods in the shops by such methods as better window displays, by stocking an increased range of commodities, and by advertising.

Shop Control

Whether a dairy owns one shop or a chain of them, the proprietor wants to know that he has received in cash the full value for all milk and goods sold in the shop. Practically all these goods will be sold for cash, and some adequate system is necessary to ensure that all takings are paid in. There are many mechanical devices on the market, such as cash registers, automatic tills, etc., which record the whole of the cash paid into the till, but such methods are not sufficient to act as an effective control over the shop-takings as a whole; they act more as a help to the shop assistant in keeping a record of cash received.

The most satisfactory way of exercising a control over shop takings is to agree the selling value of the goods sent to the shop with the cash takings, after taking into account opening and closing stocks at selling price. A record should be kept at selling price of all goods going into each shop, and the shop managers should return cash to this value, or show that the difference is represented by stock unsold. In a dairy shop the bulk of the sales are of packed goods, and as there will be no losses in serving and weighing an accurate reconciliation should be made.

Where there are several shops, it is advisable to have standard

returns which will be completed by each shop manager, and will form the basis of the control. If there is only one shop, elaborate records of this kind are not necessary. It is proposed to describe a system suitable for a group of shops, but which can be simplified and adapted for use where only one shop is owned.

For the purpose of control it will be necessary for each shop to complete three returns—

1. Daily Milk Account (Fig. 12).
2. Weekly Goods Account (Fig. 13).
3. Weekly Cash Account (Fig. 14).

Daily Milk Account

The Daily Milk Account is a quantity return showing each day how much milk has been received and what has been done with it. The principal outlet will be represented by cash sales. Certain quantities may be sold to regular customers on credit, and particulars of these should be recorded in detail on the Daily Milk Account so that the appropriate Customers Ledger Account can be charged. A small difference on the Milk Stock Account is permissible when the milk is sold loose, representing wastage and spillage which is likely to occur, but where milk is sold in bottles, a complete reconciliation each day is both possible and desirable. When the return reaches the office, the amount shown as received and returned should be checked with the records of the issuing depot. The total sales should be checked at the end of the week on to the Weekly Goods Account, on which the sales of both milk and goods are reconciled with the cash received.

Weekly Goods Account

The Weekly Goods Account is a summary showing the goods received at the shop during the week, and the quantities sold and in stock. The form presupposes that the shop stock will be taken by the manager each week. This should not present any difficulty in a dairy shop as the number of lines sold is relatively few, and their nature renders the counting of each item a relatively easy matter. The names of all the various articles sold will be printed on the return so that when the manager takes stock he has only to fill in against the item the quantity in stock.

The return shows in Column 1 the quantities of each article in stock at the beginning of the week, and in Column 2 the

quantity of goods received at the shop during the week. Columns 1 and 2 are totalled and extended into Column 3. The stock on hand at the end of the week is entered in Column 4, and the

DAILY MILK ACCOUNT							
Name of Branch				193			
		Gls.	Qts.			Gls.	Qts.
Milk Received				Sales for Cash . . .			
A M . . .							
P.M. . . .				Credit Sales			
<i>Less Returns</i>							
A.M. . .							
P M. . .							
Net Quantity Received							
TOTAL . . .				Wastage . . .			
				TOTAL . . .			
Cash Sales				qts. @ / = £ s. d.			
				Manager.			

Fig. 12

difference between Columns 3 and 4 represents the quantity of each class of goods sold during the week. This is entered in Column 5 which, when extended at the appropriate selling price for each article, should represent the total cash value of the sales

[illegible]

Fig. 18

Name of Branch
Week Ending:

Fig. 14

for the week. The milk sales are entered separately at the foot of the sheet, and should agree with the Daily Milk Account. In the case of a shop doing a cash trade only, the total on the Weekly Goods Account should agree with the cash received. If any credit sales are made at the shops it will be necessary to adjust sales shown on the Weekly Goods Account by the amount of these debtors, so that the reconciliation with the cash received can be effected. Debtors at the beginning of the week should be added to the sales, while debtors at the close of the week should be deducted.

It may occasionally happen that changes are made in the sale price of certain articles, and provision is made for such alterations on the Weekly Goods Account. The quantity of the particular article on hand at the time of the change, multiplied by the amount of the alteration, will give the value of the adjustment which should be deducted from the sales in the case of a price reduction, and added when the price is increased.

When the Weekly Goods Account is received in the office, it should be checked to see that it has been correctly prepared. The stock brought forward will be agreed with the return made for the preceding week. The goods received will be checked with the records of transfers to the shops, or with invoices received at Head Office in respect of goods sent direct to the shop. The price reductions and increases will be verified by reference to the instructions sent to the shop concerning these alterations, and with the quantity of the particular articles in stock. The cash received will be checked with the Weekly Cash Account. The accuracy of the stock on hand at the end of the week is verified by arranging for a stock checker to make surprise visits to the shops at frequent intervals to see that the stock agrees with the return made by the manager.

Weekly Cash Account

The Weekly Cash Account sent in by the shop each week should show the total cash received, and how it has been accounted for. Some businesses require the shop managers to bank all the takings without deductions, and make provision for the payment of expenses and wages at the shop by sending a cheque. The amount banked should then agree with the cash received. The more normal procedure is, however, for the expenses to be paid out of takings. The cash account will show the total takings received,

the expenses and wages paid out, and the net amount banked or sent to the Head Office.

When the Weekly Cash Account is received at Head Office the takings total will be agreed with the Weekly Goods Account. The expenses will be vouched with the receipts, wages with the authority approving their payment, and bankings agreed with the amount credited in the Bank Pass Book.

Milk in Schools Scheme

There has been for some years a considerable trade of milk in one-third pint bottles to school children under the auspices of the National Milk Publicity Council. By the Milk Act, 1934, the Minister of Agriculture was empowered to make certain grants of money to enable the milk to be sold to school children at a reduced price. As a result of co-operation between the Milk Marketing Board and the Ministry, a scheme has been in force since 1st October, 1934, which enables milk to be sold at the price of one halfpenny per third of a pint.

The reduction in price has led to a marked increase in the demand for school milk, and this has made the sale of milk to schools an important factor in many dairy businesses which previously sold very little milk in this way. This would justify some reference to the recording of these transactions in a book on Dairy Accounts, but, apart from this, the necessity of making returns to the Milk Marketing Board in order that the appropriate rebate may be obtained, makes it advisable to explain the full nature of the scheme and the methods by which the transactions can best be recorded in the books of the dairy.

The objects of the scheme are twofold, firstly to provide milk for school children at a reduced price, and by so doing perform an important national service, and secondly to encourage the milk drinking habit, and create an increasing demand for milk throughout the country.

The milk is sold at $\frac{1}{2}$ d. for one-third pint, i.e. 1s. per gallon, and the scheme provides that the distributor shall be allowed a margin of 6d. per gallon for distribution. The wholesale price for milk varies from 1s. to 1s. 5d. per gallon, according to the time of the year. It is therefore necessary for the distributor who has paid the full wholesale price for his milk to recover sufficient in rebate to give him a gross profit of 6d. per gallon. For example, if the claim is made in respect of February, 1936, when the wholesale price of milk was 1s. 5d., the rebate to be

received by the dairyman would be at the rate of 11d. per gallon made up as follows—

	<i>s.</i>	<i>d.</i>
Wholesale price of milk paid by the Distributor	1	5
Distributing margin allowed		6
	-	
TOTAL receivable by the Distributor	1	11
Received from school children	1	-
		<hr/>
Balance refundable by Board in the form of rebate		11d. per gallon

The cost of the rebate is borne equally by the Treasury and the Milk Marketing Board, and it is left to the Milk Marketing Board to administer the scheme and to pay the rebates to the distributors.

Rebates for school milk are allowed only when the school and the source of supply have been approved. A dairyman wishing to supply a school should write to the Milk Marketing Board and obtain a "Notice of Intention to Supply" form, which, when completed, he should return to the Board for approval. After the school and the supply have been approved, the dairyman will receive each month a School Milk Return Form or claim card. The total number of bottles supplied is entered on the form each day and initialed by the teacher receiving the supply. At the end of the month, the head teacher signs the certificate on the card to the effect that the quantity of milk shown has been consumed during the month by school children. This form, when completed, should be sent by the dairyman to the Board, not later than the third day of the following month, and a credit at the appropriate rate will be allowed in the dairyman's account with the Board.

Book-keeping Necessary for School Milk Sales

For the purposes of book-keeping in the dairy, each school should be treated as an ordinary retail customer. The roundsman should enter in his Rounds Book the quantities which he has supplied and on returning to the dairy should "book-in" in the ordinary way. In the Customers Ledger the total supplied each day should be recorded and the value of the supplies at the reduced price extended in the cash column at the end of the week. Where a large school milk business is carried on it is often found advisable

for all the schools to be served by one round. In this event a special Customers Ledger, which is separately balanced and reconciled, is kept for the school milk trade.

Local authorities make provision for milk to be supplied to necessitous children free of charge, and, in this case, the price for the milk will be collected by the dairyman, not from the school, but from the local authorities. A Ledger Account should, therefore, be kept showing the amount owing by the local authority for the milk supplied. In order not to complicate the gallonage records, the full quantity supplied should be entered in the Customers Ledger, as if it were all to be paid for by the school. Each week a statement will be received from the head teachers, showing the quantities which have been supplied free. The value of this milk should be charged to the local authority account and credited in the Customers Ledger to the accounts of the schools concerned. This credit is entered in the allowance column in the Customers Ledger, and only the balance, after deducting this credit, is received in cash from the schools concerned. The local authorities account will include debits in respect of all schools served, and will be settled once a quarter. Before payment can be received from the local authorities a special claim form will have to be completed, showing the total quantities supplied free to each school, and the form will be forwarded to the authorities, supported by statements signed by the head teachers.

The remaining book-keeping entries in the dairy books, relating to school milk, will concern the recording of rebates due from the Milk Marketing Board. The important point is to make sure that the rebate is received in respect of every gallon of milk sold at the reduced price. As the milk has been charged to the schools in the Customers Ledger at the reduced price, the difference in price is eliminated from the books, and if a claim were overlooked and not made against the Board, the double entry of the books would not be upset. It is important, therefore, where several schools are being served with milk, to have a system which will prevent claims from being omitted, particularly when there is a delay on the part of a head teacher in returning the claim card to the dairy. This is done by having a School Milk Journal (Fig. 15) in which the names of every school supplied with milk are entered. At the end of each month, the total quantity of milk supplied at the reduced price should be inserted in the Journal against each school, and the rebate due at the appropriate

[illegible]

Fig. 15

price extended in the cash column. The total of the cash column will represent the full rebate due from the Board for the month, and an entry can be made from this Journal, debiting the Milk Marketing Board Account and crediting the School Milk Rebate Account, or Sales Account. Once this entry has been made the total rebates due have been brought into the books, and there is no possibility of any one claim being overlooked. As the claim cards are received from the schools, they should be checked with the Journal and a note to this effect entered therein. The cards should be forwarded to the Milk Marketing Board by whom credit notes will be issued, and these when received will be checked with the School Milk Journal. If it is found that, owing to gallonage fractions, there are slight differences between the credit notes and the entries in the School Milk Journal, it may be advisable to refrain from closing the latter until the majority of the credit notes have been received.

Sub-purchased Milk

In order that proper control can be exercised over the payment of these claims, the Milk Marketing Board pays rebates only to dairymen who buy their milk from the Board. There are many hundreds of dairymen responsible for the supply of milk to schools who do not buy their milk direct from the Milk Marketing Board, but obtain their supplies from a wholesaler. In order that these schools may participate in the benefits of this scheme, arrangements have been made whereby these dairymen obtain their rebates through their respective wholesalers. The procedure to be adopted by the retailer is the same as if he were buying his milk from the Board, except that the completed claim cards should be sent to the wholesaler, who will in turn claim rebate from the Board.

The entries in the books of the retailer supplying the school will be the same as those described above, except that instead of debiting the Milk Board Account with the total value of the claims, the debit will be to the wholesaler's account.

The wholesaler supplying the milk will have to record in his books the credit to the retailer and the claim on the Milk Marketing Board. All milk sold will be charged to the retailer, in the first instance, at the appropriate wholesale price. If the retailer has sold any milk to schools, he should send to the wholesaler a claim, and the wholesaler will credit the retailer's account with the value of any claim which he is able to recover from the Milk Marketing

Board. To record these transactions, a School Milk Journal, similar to the one already described, will be necessary. The total value of the claims will be debited as before to the Milk Board Account, but the credit, instead of being to Sales Account, will be to the individual retailers' accounts. To facilitate posting, the entries in the School Milk Journal should be grouped so that all the schools belonging to one retailer are together, and a sub-total of all the claims in respect of those schools obtained, so that one credit for the total amount can be made to the retailer's account.

When claiming from the Milk Marketing Board, the wholesaler must complete Form A.C.142 in which he should set out the details of all claims made in respect of milk he has sold to retailers. He will receive a credit in his account with the Board as if he himself had supplied the milk to the schools.

School Milk Supplied by Producers

In the preceding paragraphs we have discussed the school milk rebates payable where the milk supplied to the school has been obtained by the dairyman either directly or indirectly from the producer. In many parts of the country milk is supplied to the schools by the producers and producer-retailers themselves.

The producer selling direct to the school receives rs. per gallon from the school. If he were to receive the full rebate from the Milk Marketing Board on these sales he would be receiving for this milk the full wholesale price, plus an allowance of 6d. per gallon for the cost of distributing. In that case the producer would not be bearing his share of the cost of manufacture in the same way as producers who have supplied milk to wholesalers. The Milk Marketing Board, therefore, deducts from the rebate payable to producers who have supplied milk to schools, the appropriate levy for the month in question. The producer selling to a school therefore receives for his milk the same price as if he had sold it through a wholesale contract (i.e. the regional pool price) plus 6d. per gallon for the expenses of distributing.

It sometimes happens that a dairyman is supplying a school partly out of milk produced from his own herd, and partly from milk which he has purchased. On the milk purchased and supplied to the school he is entitled to the full school milk rebate; in respect of the milk supplied from his own herd, he is entitled to the school milk rebate less the appropriate wholesale levy. In order that the Board may know the correct amount of rebate

which should be paid, the dairyman in question is required to complete a declaration (Form A.C.168) showing the source of the milk supplied. The milk, other than his own production, may have been bought from another producer under an approved Milk Marketing Board wholesale contract, or it may have been bought from a wholesaler. If the former, the first section of the form is completed by giving the number of the appropriate wholesale contract and the name of the producer supplying the milk. If the milk has been purchased from a wholesaler the second part of the form should be completed, and the certificate at the bottom signed by the wholesaler.

CHAPTER VII

THE SALE OF MILK BY WHOLESALE

FOR the purpose of discussing the book-keeping records, it is convenient to divide wholesalers into two groups—

(a) Town Wholesalers, and (b) Country Wholesalers.

The town wholesalers carry on a trade in milk similar in circumstances to that of wholesalers in other trades. Their function is to act as intermediary between the farmer on the one side and the retailer on the other. Many wholesalers perform a further service to the retailer by pasteurizing and sometimes bottling the milk for him. This is an advantage to many small retailers whose trade is not sufficient to justify the capital outlay on pasteurizing and bottling plant of their own.

The country wholesaler usually has few regular customers. Large quantities may be sent to a limited number of customers who for various reasons may not have found it convenient to have a country depot of their own, while the remaining liquid sales will be of accommodation milk. These dairies are usually manufacturing their surplus milk, and have plenty available to take advantage of the premium offered for accommodation supplies.

Records for the Town Wholesaler

The town wholesaler has accounting problems similar to those of the milk retailer. He has a large number of regular customers, and should organize his delivery into rounds each covering a specific area. The roundsmen normally visit the same customers each day in the same order.

These sales should be recorded in the financial books in a Ledger similar to the Customers Ledger described on page 53. In the Customers Ledger will be entered the daily quantities delivered to each customer and the total value of the milk supplied for the week, the cash received and the balance outstanding. The Ledger will serve both as a Sales Journal and as a Ledger. A summary of it, representing the sales for the quarter or half-year, will form the basis of an entry crediting Sales Account in the Nominal Ledger and debiting Customers Ledger Control Account.

The balancing and controlling of the Customers Ledger will be carried out in the same way as that of the Retail Customers Ledger already described (pages 50 *et seq.*).

In one important particular the keeping of a Wholesale Customers Ledger may differ from a Retail Customers Ledger, namely, the way in which details of milk supplied are obtained. Three ways are possible and these are discussed below. The method to be adopted will depend upon the circumstances of each particular case.

1. In many wholesale businesses all deliveries are made in response to specific orders received at the dairy by letter or telephone, or by communication to the roundsman on the previous day. A delivery note is made out in the dairy for each sale and handed to the delivery man, together with milk and cream already made up in separate lots. The quantities shown by the copy delivery notes should be entered on to the Daily Issue Sheet which will summarize the total issues for the purpose of preparing the Daily Milk Stock Account. The Customers Ledger can be written up either from the copy delivery notes, or from the Daily Issue Sheet. If the Ledger is entered from the delivery notes, a reconciliation of the Ledger and the total of the Daily Issue Sheet should be made.

2. The Customers Ledger can be written up from the record of deliveries made by the roundsman in his Rounds Book in the way already described (page 49) in connexion with retail sales. The roundsman should note in his book the quantities delivered to each customer and on returning from his round report to the clerk how he has delivered the milk which he has taken out. As the quantities will be large and the money involved considerable, it is not advisable for the cash to be collected by the roundsman. Statements, either weekly, fortnightly, or monthly, should be sent to the customers, showing the quantities with which they have been delivered. The prices which various customers are charged may vary. If the invoices are sent out from the office and the cash received there, the risk of loss by fraud, through roundsmen recording milk sold at a lower price than that actually received, is eliminated.

3. In view of the larger quantities involved in a wholesale business, many dairymen consider it advisable that some documentary evidence in the form of a delivery note should

accompany each sale of milk. The nature of the trade may make it impossible for delivery notes to be made out in the dairy as in (1) above. In this case delivery notes should be prepared by the roundsmen at the time of delivery, and the sales made from the bulk supplies carried by them. When the roundsmen return to the dairy the Customers Ledger should be written up from the duplicate copies of the delivery notes, and the total sold reconciled with the quantity taken out.

Records for the Country Wholesaler

The number of sales made by a country wholesaler is relatively small. The usual form of Customers Ledger will not be necessary, as this is designed for use when the volume of book-keeping is considerable. Many country wholesalers would find it inconvenient to keep the form of ledger already described, as the sales are not made regularly to the same customers each day as they are in the case of the town wholesaler.

A consignment note or delivery note should accompany all milk sent out from the dairy. The yard foreman should record these issues on his Daily Milk Stock Account, an Issues Sheet not being necessary on account of the relatively few items involved. At the end of the week, or month, an invoice for these supplies will be made out to each customer. The particulars for completing these invoices can be obtained, either from the copy delivery notes or from the Daily Milk Stock Account. The Sales Ledger should be written up either direct from copies of these invoices, or from the Sales Day Book, after the copy invoices have been entered therein. In order to obtain totals of the quantities and value of the milk and of each product sold, the Sales Day Book should be in columnar form, with one column for each heading. If a Sales Day Book is not used, and the postings are made from the copy invoices, the allocations should be made at the end of each month with the aid of a listing machine.

Depots

Most country wholesalers hold a depot licence from the Milk Marketing Board. The object of the depot is to facilitate the transfer of the milk from the country to the town, and by bulking the milk to save carriage, and by brine cooling it and treating it

in the country to reduce the risk of sourage. A depot licence is granted by the Milk Marketing Board where, in their opinion, a depot is justified. The holder of a depot licence is able to buy milk from the Board on "depot" terms, i.e. terms which entitle him to deduct from the price payable for the milk certain amounts known as rail charge and transit risk. Certain conditions attach to the issue of the licence and one of them requires the depot proprietor to make a return to the Board showing how the amounts deducted as rail charge and transit risk have been applied. The nature of this return and of the way in which it should be completed is explained below.

Each country depot serves a particular town and its primary object is the collection of milk for dispatch to that town for liquid consumption. It is the custom in the dairy trade for the producer to pay for the cost of transporting the milk to the place of consumption. In consequence there is deducted from the value of the milk supplied to a depot by each producer the rail charge and transit risk incurred in conveying the milk from the depot to the town to which milk from that depot is normally sent. The Milk Marketing Board, acting for the producers, agrees the rail charge for each depot. The transit risk is under existing contracts a farthing per gallon on milk supplied to all depots. The charge for transit risk is intended to cover the cost of insurance on the milk during transport from the depot to the liquid market. Ordinarily the producer has to send his milk to the liquid market, and stand the risk of sourage and spillage on the way. Any sourage occurring between the depot and the liquid market has to be borne by the depot proprietor because, as the milk is bulked, the loss cannot be brought home to any individual producer. As the producer is thus relieved of responsibility for sourage during the period of transit, he is expected to pay this additional transit charge.

The purchaser is allowed to deduct the transit risk and rail charge from the amount payable to the producer in consideration of the service he performs in carrying the milk to the liquid market. If in fact the milk is never sent to the point indicated in the contract, the purchaser is not entitled to receive the whole of this rail charge. In order that the Milk Marketing Board, acting on behalf of the producers, can recover any rail charge to which the purchaser is not entitled, each depot proprietor has to make a return (Form A C.60) (Fig. 16) to the Board showing how he has disposed of all milk on which he has received a rail charge.

The milk bearing the rail charge may be used in any one of four ways, viz.—

- (a) Sent to the destination specified in the contract.
- (b) Sent to some other destination.
- (c) Sold locally.
- (d) Used for manufacture.

If the milk is sent to the appropriate destination, no adjustment is necessary, because the depot proprietor has performed the service which he undertook when he signed the contract. If by bulking the milk in a tank, he has been able to send the milk to the destination at a rate cheaper than the rail rate specified in the contract, he has made a profit to which he is entitled, and which he is not expected to return to the Board. If he has sent the milk to another destination which is not so far away as the one specified in the contract, he is only entitled to receive the rail charge to that near destination. Take, for example, the case of a depot in Somerset where the appropriate destination is London, and the rail rate is fixed at 1·6d. per gallon. If the milk is sent to Bournemouth, the rate in that case being 0·97d. per gallon, the depot proprietor must return to the Board the difference between 1·6d. and 0·97d. per gallon, viz. 0·63d. per gallon on all the milk sent to Bournemouth. This refund is necessary because the producer is expected to pay carriage to take the milk to the liquid market only, and if this liquid market is found without having to take it all the way to London, the producer is entitled to the benefit. As the milk has been bulked it is not possible to say which producer's milk has been sent to the nearer destination, and the excess rail carriage is therefore refunded to the Board. Each quarter the Board distributes to all the producers supplying the depot the carriage recovered, in the proportions in which the producers have supplied milk during the quarter.

The transit risk allowance is made irrespective of the distance, and therefore as this milk has been conveyed to another destination the depot proprietor is entitled to receive the transit risk in full, even if he has not carried the milk to the destination specified in the contract.

If the milk is sold locally, no rail carriage is incurred; the whole of the rail charge deducted from the producer has to be refunded to the Board.

On milk manufactured, the manufacturer is not entitled to either transit risk or rail charge. Any rebate on manufactured

milk allowed by the Milk Marketing Board is reduced by the amount of rail charge and transit risk deducted from the price of the milk paid to the farmer. This deduction is made from the rebate claim itself (Fig. 19). As the depot proprietor has refunded the rail charge and transit risk on the manufactured milk when making the rebate claim, he is not expected to account for it again on Form A.C.60.

The Depot Carriage Adjustment Schedule

The Depot Rail Carriage Adjustment Schedule (Form A.C.60) is divided into five sections. Section A records the total of all milk purchased under contract. Various other items on which rail carriage is accountable, e.g. opening stock and transfers from other depots, are entered in Section B, while similar items in respect of which the depot proprietor is entitled to credit are shown in Section C. Details of the carriage incurred in sending milk to the various destinations are set out in Section D so that the Board can see what rail charge the depot proprietor is entitled to receive. In this connexion it should be noted that if the milk is sent further than the appropriate destination it is done so at the depot proprietor's own expense. He cannot receive on any gallon of milk more than the rail charge specified in the contract. Section E is a summary of the debit and credit adjustments, showing the net amount which is repayable by the depot proprietor to the Board.

It should be remembered that the term "rail charge" does not necessarily mean that the milk must be sent by rail. "Rail charge" in a milk contract refers to the cost of transporting the milk from a depot to the liquid market, and is allowed to the depot proprietor if he sends the milk to the appropriate destination, whether by rail, motor or any other means available.

CHAPTER VIII

MILK USED IN MANUFACTURE

ALTHOUGH in this country milk is principally a commodity of general consumption, it is also the raw material used in the manufacture of other products. The most important of these are butter, cream, cheese, condensed milk, dried milk, and baby foods. Many subsidiary products such as lactose, casein, bake-lite, etc., are obtained from the by-products of milk, but these are not important so far as dairies are concerned, as their manufacture is not carried on in factories handling fresh milk.

Types of Manufacturers

Manufacturers of milk products can be broadly divided into two classes: (*a*) those to whom milk manufacture is merely ancillary to a liquid milk business, and (*b*) those whose principal occupation is manufacture and whose liquid trade (if any) is relatively unimportant. The former are usually to be found in the principal cities and areas where there is a large demand for liquid milk. These dairymen manufacture primarily to obtain an outlet for milk which is surplus to their liquid requirements, and incidentally to obtain cream, butter, and cheese for sale to their liquid milk customers. The other type of manufacturer is to be found in the milk-producing areas where supplies are plentiful and the channels for disposal as liquid milk are few. Many of these creameries were formed to absorb surplus milk in areas far away from a liquid market. In the years prior to 1933 the low price prevailing for milk products, coupled with improved transport facilities, induced many of these creameries to force their way into the liquid market by undercutting. Since the formation of the Milk Marketing Board, and the establishment of the principle of the payment for milk according to its utilization, these creameries have not had the same incentive to sell liquid. Although many still rail large quantities to the big consuming centres, others have abandoned or lost their liquid trade, and have concentrated their activities on the manufacture of one or more of the various dairy products.

Manufacturers of dairy products receive milk for this purpose at prices less than the prevailing price for milk for liquid

consumption. The actual price payable varies with the product, and full details of the prices ruling at the present time are set out in the conditions governing the granting of rebates on milk manufactured. The reduction in price is granted by the Milk Marketing Board only to manufacturers who hold the Board's licence to manufacture, and who comply with the conditions. These conditions provide that the manufacturer should keep records of the utilization of all milk, and the disposal of the milk products. The maintenance of an adequate system of book-keeping is therefore a matter of considerable importance to all manufacturers.

The book-keeping records peculiar to dairy manufacturers are divisible into three groups, each of which is dealt with separately below—

- (a) Production Records.
- (b) Product Stock Records.
- (c) Product Sales Records.

Production Records

The record of production maintained in every creamery should be a daily one because normally the whole of the milk will be processed on the day on which it is received. Particulars of production should be recorded by those actually responsible for the manufacture on a Production or Process Return which should show the quantity of milk used in the manufacture of each product, and the quantity of each product obtained. If this return is to be a reliable record of activity, both these figures should be measured and not calculated by means of estimates.

In a large dairy where work is departmentalized, the cheesemaker, butter-maker, powder-maker, etc., may each make a return to the office, where a combined Process Return is prepared. In a small dairy the yard foreman, or someone in a similar capacity, is in such close contact with all the operations as to be able to complete the production return covering all activities. Fig. 17 gives an example of a Daily Production Return for a dairy manufacturing one product only, but suitable rulings can be designed for use when more than one product is made and it is desired to group all the information on one form.

The Production Return is normally combined with a Daily Stock Account for each product. The Production Return shows therefore not only what has been produced, but also how this production is accounted for.

CREAM PRODUCTION RETURN

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	Gls.	Qts		Gls.	Qts.
To Stock brought forward			By Cream Issued		
„ Cream Produced			„ Churned		
B.F.C. „			„ Wastage		
(Milk used gallons)			„ Stock carried forward		
			Signed		

Fig. 17

Yields

The salient fact in the Production Return is the yield of product from a given quantity of milk, as this shows the manager whether or not production is being efficiently and economically carried on. For most dairy products it is possible to calculate quite accurately the yield which should be obtained from milk of known butter fat content. The principal complication is that milk is not a consistent product and its contents may vary considerably. These variations are due *inter alia* to differences in herds, in feeding, in the time of the year, and whether it is the morning's or night's meal of milk. For manufacturing purposes, a gallon of milk is not entirely a satisfactory measure, and, but for the question of payment, which is at the rate of so much per gallon, milk records could with greater advantage be kept in butter fat pounds. In colonial and foreign countries where milk production is predominantly for manufacture, milk is measured on this basis, and payment is made according to the butter fat.

Most modern dairies take frequent samples of the milk both as a check on the farmer, and also for the purpose of computing the yields. When the contents of the milk used in production are known it is an easy matter to calculate the quantity of product which should be obtained, as the following examples will show. If the actual yield varies widely from the theoretical yield it is an indication of one of the following—

(a) Wasteful manufacture resulting in excessive quantities of fat being lost in the separated milk or butter milk.

(b) Inaccurate measuring of the milk used or of the product obtained.

(c) Defalcations or losses of milk or products.

Whatever the cause the circumstances should be examined and steps taken to prevent the recurrence of the leakage.

The following are examples of how yields are calculated—

Cream

Butter fat content of milk (say) 3·5%

Butter fat content of skim milk (say) 0·1%

Therefore fat retained in cream is 3·4%

A gallon of milk weighs 10·32 lb.

Therefore the weight of fat obtained from a gallon of milk is

$$\frac{3\cdot4}{100} \times 10\cdot32 \text{ lb.}$$

A gallon of cream of 50% butter fat content weighs 9.801 lb.

Weight of fat in a gallon of cream is $\frac{50}{100} \times 9.801$ lb.

The number of gallons of milk required to make a gallon of cream is therefore—

$$\left(\frac{50}{100} \times 9.801 \right) \div \left(\frac{3.4}{100} \times 10.32 \right) = 14.00 \text{ gal.}$$

Butter

Butter fat content of milk (say) 3.5%

Loss of fat in separated milk, butter milk, etc., estimated at (say) 0.2%

Therefore fat obtained from a gallon of milk for butter making is 3.3% of 10.32 lb.

Estimated butter fat in 1 lb. of butter after allowing for moisture and salt is 85%

The number of gallons of milk required to make a pound of butter is therefore

$$\frac{85}{100} \div \left(\frac{3.3}{100} \times 10.32 \right) = 2.49 \text{ gal.}$$

Dried Milk Powder

100 gal. of milk = 1032 lb. of milk

Percentage of total solids = 12.5

Weight of solids in 100 gal. of milk

$$= \frac{125}{1000} \times \frac{1032}{1} = 129 \text{ lb.}$$

Approximate yield of powder should be 129 lb.

In this computation no account is taken of the gain in weight through the retention of moisture in the powder or the loss through wastage in manufacture.

The yields of two dairy products, viz. clotted cream and cheese, cannot be computed with the same degree of accuracy. The yield of clotted cream depends very considerably on the weather. In cold frosty weather the cream rises well and gives a good head and the yield is high. In warm weather it is more difficult to get a satisfactory yield. If the quantity of cream obtained when the head is skimmed off is low, it means that a larger proportion of butter fat is left in the "scald" or pan milk. If this latter is

separated for churning, or otherwise used again in manufacture, the actual yield of fat is not affected by the incidence of the weather. In some dairies, however, the scald milk is sold or thrown away, and a low yield due to muggy weather means actual loss of production.

In the case of cheese the solids contents of the milk are not the only factors which contribute to the yield. Variations in the method of manufacture will affect the quantity of moisture which will remain in the cheese and the quantity of fat which will be lost in the whey. Although every effort should be made to keep the ripening room at an even temperature and humidity, variations in the weather will affect the amount of moisture content, while the longer the cheese is kept before sale the more weight it will lose. This last point is particularly important in the case of cheeses like Stilton, which may be sold at any time from one to twelve months after production. In spite of these difficulties and variations, most efficient manufacturers have a fairly shrewd idea of the yield of cheese which they ought to get. Generally the yield for each class of cheese will vary according to the time of the year, being higher in the late autumn when the solids content of the milk is high, and lower in the early summer when the reverse is the case.

The Daily Production Return is a most important record in the control of a factory, both technically and from an accountancy standpoint. By scrutinizing the return carefully each day, the manager obtains a general view of the activity of the factory, including the results of production, whether these are adequate in quantity having regard to the milk used, the quantities disposed of, and the stock on hand at the end of the day. In the case of cream and milk, it is usual to check the stock at the close of each day's operations, but with the other products the checking of stock at such frequent intervals is not usually practicable. Instead, stock is taken monthly or quarterly and reconciled with the estimated stocks which are shown from day to day on the Production Return. Any discrepancies brought to light at the end of the month or quarter will be closely examined to see whether they are due to errors in book-keeping, defalcations in the stores, or mistakes in stock-taking, so that steps can be taken to prevent their recurrence.

For accountancy purposes the Production Return represents the primary document to which should be related all subsequent entries concerning the quantities of products. Provided the return

has been checked each day and found to be accurate, a summary of these returns for the month will give control figures by which the production and stocks of the business can be checked. The Production Return can be suitably summarized in a book or form similar in ruling to Fig. 18. By using the totals of the various columns a Milk Stock Account for the month can be obtained, which will verify the arithmetical accuracy of the Production Returns and of the Summary. The total production of the various products will represent the quantities to be debited to the Product Stock Accounts, kept for the purpose of maintaining control over stocks.

The Rebate Claim

The monthly totals shown in the Production Summary will also provide the information for preparing the Monthly Rebate Claim Form A.C.58 (Fig. 19) which is submitted by every manufacturer to the Milk Marketing Board each month, in support of his claim for a reduction in price in respect of milk which he has manufactured. All milk obtained from the Board is charged to the purchaser in the first instance at the full liquid price, and the reduction to the appropriate manufacturing price is only made after the claim form has been received and approved. In view of the importance of this document to all manufacturers it is explained in detail.

The left-hand side of the form is a Milk Stock Account, the receipts being shown in the top half and the disposals underneath. In completing the claim form, it is necessary to record milk purchased from the Milk Marketing Board, divided according to the region in which it is produced. This normally presents no difficulty to the manufacturer because the numbers of contracts for the supply of milk bear a prefix which denotes the region to which they relate. Thus O1 prefixed before a contract number means that the producer concerned has his farm in Region 1, i.e. the Northern Region, O2 the North-western Region, and so on. In practice many manufacturers draw all their supplies from one region only. Milk which was not purchased from the Board but from other creameries, or from producers who are exempt from the operations of the Milk Marketing Scheme, must also be shown on the return.

Before proceeding to describe further the Rebate Claim Form it is necessary to explain the procedure adopted in connexion with milk which is manufactured not by the person who has purchased

MONTHLY PRODUCTION SUMMARY

Date	Open- ing Stock	Con- tract Pur- chases	Other Pur- chases	Trans- fers In	Sold Retail	Sold Whole- sale	Trans- fers Out	Milk Sepa- rated	Cream Pro- duced	Yield	Cream Sold	Cream Churned	Butter Pro- duced	Skin Pro- duced	Milk to Cheese	Cheese Pro- duced	Milk Waste
1																	
2																	
3																	
4																	
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23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	
Total																	

Fig. 18

it from the Board, but by some other firm to whom the milk has been sold. Sales and transfers of milk for manufacturing purposes are quite usual in the dairy trade. Sometimes this is done because one dairy has a surplus which it cannot conveniently handle. In other cases, a firm may require milk for manufacture, but may not wish to buy direct from the Milk Marketing Board as this would entail the acceptance of deliveries from several farmers and of balancing supplies. By purchasing supplies from a wholesaler the exact quantities required can be obtained.

The Milk Marketing Board does not allow a rebate on any milk unless it has been purchased from producers under an approved contract. On the other hand, the manufacturer could not afford to manufacture the milk and pay the full liquid price for it. To overcome the difficulty, the Board allows the firm which has purchased the milk and sold it for manufacturing purposes, to claim the rebate as if it had itself manufactured it. The claimant who has not himself manufactured the milk must support his claim with a Utilization Certificate (Form A.C.57) from the sub-purchaser to the effect that the latter has used that quantity of milk in the manufacture of dairy products. The certificate will, of course, be accepted only if the manufacture has been carried out by a firm whose premises have been approved by the Board for manufacturing purposes.

To avoid any possible confusion from transactions of this kind, the Rebate Claim Form makes provision for these to be clearly shown. If a manufacturer purchases milk for manufacture under these circumstances, the quantity received must be shown under heading 2 (iii) in the first section of the rebate claim. The disposal of this gallonage (which will all have been manufactured) will be shown under heading 3 (c) below. This milk, although manufactured, will not be included in Section 3 (Details of Claims) of the Rebate Claim Form because this milk has not been purchased direct from the Board. The claim will be made by the firm which has sold the milk.

The disposals half of the Milk Stock Account (Section 2 of the form) distinguishes between milk sold liquid and milk manufactured. If the manufacturer has sold part of the milk for manufacture he will show this separately under heading 3 (b) in Section 2, and again in Section 3. Sections 4 and 5 on the back of the form show who supplied the milk for manufacture (Section 4) and to whom milk for manufacture has been sold (Section 5).

Section 3 (Details of Claim for milk used for manufacture) is the most important part of the claim form. In this section is set out the gallonage of milk used in the manufacture of each product and the quantity of product obtained. To obtain the price payable for the milk, the gallonage allocated to each product is calculated at the appropriate manufacturing price. The gross value of the rebate is obtained by deducting the manufacturing price of the milk from the value of the milk at the liquid price. This calculation is made at the foot of Section 3.

Certain deductions are sometimes made from the gross rebate to obtain the net amount of the claim. The one-eighth of a penny deducted in May is in respect of the levy for milk publicity, which is payable on all milk purchased from the Board during that month. If the milk is manufactured within the Metropolitan area, the contract provides that an additional penny per gallon is payable in respect of manufacturing milk, and this provision is given effect to by deducting a penny per gallon from the gross value of the rebate. Similarly a halfpenny per gallon is charged in respect of all milk manufactured in towns of over 60,000 population.

The deduction for freight charge and transit risk is made only where the contract for the supply of milk by the producer to the purchaser contains provision for these charges. As has already been explained in Chapter VII the manufacturer can retain the rail charge and transit risk charge deducted from the producer only when he has performed the service undertaken in the contract, namely to carry the milk to the liquid market. If the milk is manufactured, the purchaser is not entitled to retain the rail charge and transit risk. The Board recovers the charges by deducting them from the gross rebate. The deduction is made even if the milk is sent to the liquid market and afterwards manufactured. The freight charge is allowed to the purchaser so that the milk may reach a more remunerative market. If, in fact, the Board does not receive the price applicable to the more remunerative liquid market, it cannot allow the purchaser the freight charge for carrying the milk there.

Product Stock Records

The control of the stock movements of a business is maintained by two ways—

(a) Stock records kept by those actually responsible for handling the commodity and showing the physical movements taking place.

(b) Summary records which are related and reconciled with the financial books of the business.

No system of stock control is complete without both detail records and the reconciliation of totals with the financial books. Errors in the financial books are less likely to occur than in the stocks records, because in the first place each cash transaction involves a third party, and secondly the financial books are normally kept and balanced on a double entry basis. If the Summary Stock Accounts prepared from the financial books are reconciled with the daily quantity records, the accuracy of both is confirmed. Put another way it means that as the ultimate object of all production and trading is the financial one, the products stock records are of little value to the proprietor unless they are linked to the financial books.

Detailed Quantity Records

There are not usually numerous varieties and qualities of dairy products made by one manufacturer. For this reason stock records for dairy products need not be elaborate. In spite of this, it is surprising how many manufacturers keep no stock records of dairy products, and can, therefore, exercise no real control over the staff who are handling them.

The Daily Production Return, if in the form shown in Fig. 17, is in effect a Stock Record. It records all movements of the product during the day. In most cases this return is the only detailed quantity record required. Where sales are very numerous it is necessary to have a detailed record of issues similar to that already described in the case of milk (page 43). The total of the Issues Summary will be included in the Daily Production Return. Each day the Return should be checked in detail. Production as already explained will be verified by reference to the yield. All disposals, i.e. sales, transfers, and issues on consignment, should be checked with the records of these disposals, such as roundsmen's tickets, copy consignment notes, etc., to see that all stock issued is accurately recorded, and that no products have left the dairy without a record being made.

Summary Records

Summary records of sales and purchases should be prepared from the financial books independently and reconciled with a summary of the Daily Return. The summary should be obtained by having quantity columns in all financial books relating to

CHEESE PRODUCTION RECORD

Date	Quantities	Acidity	Temperature	Times	Cheeses Made	Remarks
	Milk	At Renneting	At Renneting	At Renneting	Weight of Curd	
	Starter	At Cutting	At Cutting	At Cutting	No. of Cheeses	
	Annatto	Of Whey when Drawn	At Scalding	At Drawing	Large	
	Salt	At Grinding	At Grinding	At Pitching	Medium	
					Small	

Fig. 21

sales and purchases of products. As the cash values are posted to the Nominal Ledger the quantities should be entered in the columns provided. The total production for the period will be obtained from the Monthly Production Summary. A typical Summary Stock Account in the Nominal Ledger is shown in Fig. 22. The balance in quantity on this account should be reconciled with the stock on hand shown by the Daily Return, and with an actual inventory. Full inquiries should be made into all differences disclosed on the occasion of each stock-taking. These differences may be due to mistakes in the records, inaccurate stock-taking, or wastage and pilferage of the product.

Sales Records

The nature of the products sales records of a dairy will depend upon the size of the business and the method by which the products are disposed of. The normal channels for the disposal of dairy products can be conveniently classified for the purpose of discussion into six groups as follows—

- (a) Retail sales to customers on milk rounds (principally cream, butter, and soft cheese).
- (b) Retail and wholesale cash sales from the dairy.
- (c) Transfers to shops or other depots belonging to the dairy.
- (d) Credit wholesale sales and sales to brokers.
- (e) Transfer to a warehouse, or into cold storage.
- (f) Sales on consignment.

Rounds Sales

In Chapter V the types of records suitable for rounds sales of milk have been described. These records can be conveniently adapted for rounds sales of dairy products which are normally sold under similar conditions. Where, as is usually the case, the dairy products are sold at the same time as the milk, the rulings will provide for additional columns for the quantities of products, so that these can be summarized for the purpose of preparing the Quantity Control Accounts.

Retail Cash Sales at the Dairy

Retail cash sales of products from a dairy present some difficulties of control because they frequently take place in an informal way. The most satisfactory system is for the dairy hands or foreman to make out a docket for anything they sell, and allow the cash to be taken by the clerk in the office. Such a system is

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Fig. 22

quite practicable, and advisable in a dairy of any size. The difficulties in a small dairy are well recognized, because by making two persons deal with each customer extra work is thrown on the staff, which has no spare time for such duties. Provided the cash sales are very small, and are made by a reliable employee only, the introduction of a check of this kind can be dispensed with. In that case the employee effecting the sale should record the quantity and value of each sale, and account for the cash received at the end of the day.

Transfers to Shops and Depots

Transfers to Shops and Depots should always be recorded by making out at the time of transfer a Transfer Note, a copy of which should be sent to the receiving depot. This is essential if there is to be a proper control and if disputes between the depots and shops are to be avoided.

Transfers between one depot and another are not normally reflected in the financial records unless separate accounts are being prepared for each depot. Records of transfers are necessary so that proper stock accounts can be prepared, and so that the control over the shops described in Chapter VI can be maintained.

Transfers to Warehouses or into Cold Storage

Transfers from the dairy to other warehouses should be made the subject of a transfer note in the same way as transfers to other depots. It is usually advisable to keep separate quantity control accounts in respect of each store in which products are kept. This has the effect of breaking down the stores accounts into smaller units. Differences disclosed by the stock accounts can be more readily traced, and the responsibility more quickly brought home to the person in charge.

Wholesale Sales

The system of recording wholesale sales will to a considerable extent depend upon the size of the business and the number of the transactions. The accounting problem is little different from that experienced in similar circumstances in other industries, and therefore does not require detailed explanation. The system should provide for the following—

- (a) A delivery note to be dispatched with each consignment.
- (b) The maintenance of adequate records of all issues from the

dairy in the form either of copy delivery notes or of files of orders, issues sheets, etc.

(c) Invoices to be prepared from the particulars of issues.

In the case of sales of cheese to factors, the invoice is prepared from the factor's note which records the weight of cheese sold. Payment is normally made on the weights returned by the factor, who does not usually weigh the cheese until it reaches his own warehouse.

Consignment Sales

Many dairies sell cheese on consignment. The cheese is sent to the factor, or to a warehouse in accordance with the factor's instructions, and sold by them for the best price that can be obtained. The cheese is not sold to the factor but belongs to the dairy, until sold by the factor. Stock dispatched on consignment can be treated as transferred to outside stores, and no record made in the financial books until the sale has been made. Where, however, consignments are numerous there is no better way of recording consignment sales than the orthodox one, familiar to all students of the standard book-keeping textbooks.

This system is briefly as follows: When the cheese is dispatched on consignment, a consignment note should be made out, advising the factor of the quantity sent. As the cheese is not sold, the price which will be received for it is not known. For the purposes of recording the transaction in the financial records it is usual to place an arbitrary price on the cheese. This price cannot be charged to the factor because he is not yet a debtor of the dairy. The debit, therefore, is made to a Consignment Account, and the credit, instead of to Sales Account, as would normally be the case, is made to a "Goods on Consignment Account." When the factor has sold the cheese, he renders to the dairy an Account Sales, showing the price realized for the cheese, his charges and expenses and the net amount due to the dairy. At this stage an invoice is made out, at the price realized for the cheese. The invoice will be entered in the Sales Journal from which the sale will be debited to the factor's account and credited to Sales of Cheese Account. The provisional entry debiting Consignment Account and crediting Goods on Consignment Account must now be cancelled, and the reversing entry will be made at the same price per lb. as the original entry. The weight of cheese sold will probably be less than the weight sent on consignment on account of shrinkage. In order that the provisional entry may be correctly eliminated

the reversing entry must be based on the weight of the cheese as it leaves the dairy and not on the weight at the time of sale.

Cheese Records

Cheese production has certain peculiarities about it which necessitate a special type of record, both for production and stock purposes, and for this reason it is dealt with separately.

Production Records

The production of cheese is a technical process requiring the closest attention throughout. Owing to variations in the composition of milk it is necessary to make tests of the milk and the curd at various times during production so that adequate control is maintained and the correct measures taken to ensure the manufacture of a satisfactory cheese. Temperature and acidity tests have to be taken at intervals and for technical reasons it is advisable for these to be recorded for permanent reference so that, *inter alia*, the cause of any faults which develop later can be traced. The Production Return for cheese should provide for the recording of this technical information as well as particulars of the quantities of milk used, and cheese produced. A usual form of cheese production record is shown in Fig. 21. As the technical and other information will vary with each vat, and cannot therefore be merged, a separate record for each vat is necessary. Where many vats are used, a separate sheet should be made out for each day.

Stock Records

Most of the hard varieties of cheese cannot be sold until some weeks after manufacture. In practice cheese is retained until ripe before being sold, the period required for ripening varying with the class of cheese, being as little as ten days for Caerphilly and as much as three to six months for Cheddar and anything up to nine months for Stilton. It is apparent that the quantity of cheese in stock at any particular time is likely to be considerable. A Stilton cheese-maker may have in stock more than the equivalent of six months' production. Further, the value and weight of each individual cheese is usually fairly large. For both these reasons the maintenance of good stock records for cheese is of considerable importance, and the relatively small number of cheeses compared with the total weight and value makes

detailed and comprehensive stock records more practicable than in the case of many other commodities.

Three different methods of keeping cheese stock records are described below. In the first the weight and numbers of cheeses are reconciled in total; the second provides for a record of each individual cheese, while by the third method the stock of cheese is divided into convenient groups each of which is balanced separately.

(a) **Reconciliation in Total.** The form of Stock Accounts to be used when stocks are reconciled in total will differ little from that used for other dairy products, already described. The Stock Accounts record the numbers of cheeses, the weight when sold, and wherever possible the weights of cheeses at the time of production. This latter is not always practicable, as certain cheeses (e.g. Stilton) cannot conveniently be weighed after removal from the moulds, and the only production weight available will be that of the curd.

A specimen Cheese Stock Account is given in Fig. 22 providing for three sizes of cheeses. The arithmetical balance will be carried forward each day and agreed with a physical stock-taking at regular intervals. It should be possible to reconcile numbers exactly, but there will be a difference in weight due to the shrinkage of the cheese while maturing.

(b) **Reconciliation of Individual Cheeses.** Some manufacturers find it practicable to maintain stock records of each individual cheese. To do this, it is necessary to give each cheese a number and to endorse this number on the cheese itself. A record of each cheese made, with the appropriate number, will be written into the Cheese Stock Book (Fig. 23) and the weight inserted when this is obtained after the cheese has been removed from press. As cheeses are sold the details of the sale will be written up from the copy invoices on the credit side of the Stock Book, the particulars being obtained from copy consignment notes or copy invoices. For this to be practicable, the number of each cheese must appear on the invoice or consignment note. The Stock Book will show at any given time the cheeses which have not been sold, and these can and should be verified by actual count at frequent intervals.

(c) **Reconciliation in Groups.** Where lack of clerical assistance and other circumstances prevent the stock recording of each individual cheese, while at the same time something more than total reconciliation is required, it is usual for the stocks of cheeses

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Fig. 23

CHEESE STOCK BOOK

Date	Lot No.	Number Made			Green Weight	Gallons of Milk Used	Date Sold	Number Sold			Sales Weight	Invoice Reference	Loss		Name of Customer
		Large	Medium	Small				Large	Medium	Small			Lb.	%	
21/1/37	21	14	6		896	850	24/2/37	6			330	A 16			Brown
							27/2/37	3			162	A 23			Perkins
							1/3/37		4		58	A 48			Smiths' Ltd.
22/1/37	22	15	8		1010	950	25/2/37	8			454	A 18			Perkins
							29/2/37		4		60	A 37			Jones & Co.

Fig. 24

to be grouped. The basis of the grouping is usually the date of manufacture, and the period for each group is either a day or week, or even month, according to the extent of the control required. Each group or lot will be allocated a number or letter for identification purposes. All the production of each lot, i.e. of each day or week, will be entered together under the one lot number. Fig. 24 shows a form of Cheese Stock Book to be employed where each day receives a different lot number. When a whole week is included under one lot number, more space for the recording of both production and disposal of each lot is required.

The number of cheeses produced is recorded in the Cheese Stock Book each day from the Production Return, and allocated a lot number. For purposes of identification this lot number should be endorsed on each cheese. More space is necessary for the recording of disposals than of production because normally all the cheese in one lot will not be disposed of at one time. The section devoted to each will in fact represent a Stock Ledger Account, and the difference between the number produced and the number sold will represent the quantity which should be in stock at any given time. This is capable of being verified by actual stock-taking at regular intervals. If any differences occur these can be readily traced, as any error can be located to a particular lot and the cause of the discrepancy detected.

For practical purposes, the form of Cheese Stock Record last described is considered the most suitable for general use. Where reconciliation is made in total only, there is often little real check on the stock, because when differences arise it is practically impossible to trace them, and one of the principal advantages of maintaining stock accounts is lost. The maintenance, on the other hand, of a record of each individual cheese, while desirable, normally entails so much clerical work as to make the cost of the system outweigh its advantages. The third system has practically all the advantages of the second while involving only a fraction of the cost.

CHAPTER IX

OTHER FINANCIAL RECORDS

THE books and records so far described have been directly concerned with milk and the other products which a dairyman buys, sells, and manufactures. The peculiarities of the milk trade influence the form of these records and make them differ from corresponding records of other traders. Every dairy business also keeps certain account books which are not directly affected by the nature of the products bought and sold. The form of these further records does not vary from trade to trade, but differs in individual businesses according to their size. It is not therefore possible to describe specimen forms of these other records as suitable for use in the dairy trade. Discussion has been restricted to those aspects of these records which have a direct interest to all dairy businesses. Anyone wishing for a more detailed explanation of the methods of keeping these records should refer to one of the recognized textbooks of book-keeping and accounts.

The Nominal Ledger

In every business it is necessary at some time or other to summarize all the transactions and activities in a given period, for the purpose of preparing accounts which will show the results of trading and the financial position of the business. These accounts normally take the form of Trading Accounts, Profit and Loss Accounts, and Balance Sheets. It is, therefore, necessary to discuss how the various records previously described are summarized for this purpose. The principal account book which records the summarized results of trading is the Nominal or General Ledger, and the entries it includes differ little in principle whatever the nature of the business. Most accountants would have no difficulty in designing the form and lay-out of a Nominal Ledger for a dairy business, even if possessing no previous experience of the dairy trade, because its form would follow closely that applicable to any other trading concern.

The list below is representative of the accounts usually found in the Nominal Ledger of a dairy business—

Trading Accounts

Purchases	.	.	Milk.
			Cream.
			Butter.
			Sundries, etc.
Sales	.	.	Milk.
			Cream.
			Butter.
			Sundries, etc.

Stock Accounts.

Expense Accounts

Dairy Wages.
 Dairy Expenses.
 Fuel, Coal, Coke, etc.
 Water.
 Repairs to Plant.
 Power.
 Rent, Rates, etc.
 Cleaning.
 Milk Testing Expenses.
 Roundsmen's Wages.
 Roundsmen's Commission.
 Motor Expenses.
 Horse-keep and Stable Expenses.
 Bottles, Discs, Cartons, and Crates.
 Depreciation of Vehicles.
 Repairs to Vehicles.
 Petrol and Oil.
 Depreciation of Plant.
 Repairs to Plant.

Establishment Expenses

Clerical Salaries.
 Managerial Salaries.
 Printing, Stationery, Postage, etc.
 Legal and Professional Charges.
 Advertising.
 Canvassers' Wages and Expenses.
 Bad Debts.
 Insurance.
 Telephone.
 Trade Expenses and Office Expenses.
 Lighting and Heating.
 Depreciation of Buildings.
 Repairs to Buildings.

Assets and Liabilities

Debtors and Creditors—Total Accounts.
Dairy Plant and Machinery.
Reserves.
Capital Accounts, etc.
Vehicles, Motor Vans, etc.
Horses.
Fixtures and Fittings.
Churns, Utensils, etc.
Stocks of Manufactured Products, etc.
Goodwill.

Purchases and Sales

The Trading Accounts items, i.e. purchases and sales, can be combined into one account, forming in effect a Trading Account for each product. By including a column for quantities (gallons or lb.) the Nominal Ledger Account becomes at once a quantity Stock Account and a product Trading Account. By this means also the accuracy of the quantity Stock Account is verified by a direct link to the financial records of trading.

When milk is used for manufacture as well as sold liquid, the Milk Account will be credited with the quantity of milk manufactured at the manufacturing price appropriate to the particular product (see Fig. 25) and this will be charged to the Product Trading Account. If several grades of milk are sold it is advisable, where practicable, to keep separate Purchase and Sales Accounts for each grade. This is particularly important where separate cost statements are prepared for each quality of milk.

Sales Ledger Total Accounts

One distinguishing feature of dairy book-keeping is the use of a combined Sales Day Book and Sales Ledger for rounds sales. This form of ledger does not dispense with the necessity of a Control Account kept in the Nominal Ledger, and linked with the financial books. To facilitate posting, the weekly totals from the Rounds Ledgers should be summarized quarterly or half-yearly according to the period usually covered by the accounts. The sales should be analysed between milk, butter, cream, eggs, cheese and sundries, for the purpose of crediting the correct amount to the various Sales Account, while the total of the sales of all products is debited to the Rounds Ledger Total Accounts. Where there are many rounds, it is advisable to have separate control accounts for each ledger.

The cash received from customers is entered each day in the Customers Ledger Column in the Cash Book, and the total is credited each month to the Control Account. Where there are several rounds it is necessary to have a Rounds Cash Summary Book in which the total cash received from each round for the quarter or six months is obtained. Before any postings are made, the total of the Rounds Cash Summary should be reconciled with the total cash received from rounds as entered in the Cash Book.

A column is provided in the Rounds Ledger for allowances. Some of these allowances may be directly attributable to various products, e.g. sour milk or cream, broken eggs, etc. Others may be of a general nature, such as discount allowed, bad debts written off. In order that the allowances can be correctly analysed in the accounts it is necessary to make a summary of the allowance column in the Rounds Ledger each week. These summaries will be further summarized to obtain the quarterly or half-yearly totals for posting to the Nominal Ledger.

In the case of wholesale sales of butter, cheese, etc., the Sales Ledger will not be normally combined with the Day Book. Instead an analytical Day Book will be employed from which the totals to be credited to the various products accounts can be obtained. Many firms do not use a Sales Day Book at all, but post the entries to the Sales Ledger direct from copies of the invoices. The system is practically universally adopted when machine ledgers are employed, as it gives greater elasticity to the work of posting. The analysis of sales is obtained in such circumstances by listing the sales of each category on adding-machine slips and agreeing the sub-totals with the total sales for the month.

Cash Books

No particular form of Cash Book can be said to be necessary in the dairy trade. The actual form to be employed will depend upon the size of the particular business, and the scope and variety of its activities. In a retail dairy business the bulk of the cash is received and paid to the firm by the roundsmen, and the cash records for the business consist principally of summaries of this cash. The detail records employed have been discussed in Chapter V. The Main Cash Book summarizing all the cash transactions of the business will record only one total of the cash received from the rounds each day. This should be extended into a separate column, so that the total cash received in any period can be agreed with the rounds cash summaries.

CHAPTER X

THE BALANCE SHEET

THE preparation of the Balance Sheet of a dairy does not present any unusual difficulties. There are, however, certain accountancy problems relating to the assets of a dairy business to which reference should be made. It is assumed that the reader understands the principles governing the preparation of a Balance Sheet, and it is proposed to deal only with these particular problems under the various headings which usually appear in the Balance Sheet of a dairy concern.

Plant and Machinery

The nature of the plant and machinery employed in the dairy trade has developed enormously in variety and complexity during the last ten or fifteen years, particularly in the distributing section of the industry. The growth, first of pasteurized and later of bottled milk, has led to the placing on the market of many costly and elaborate plants for carrying out these processes with great speed and efficiency. The general increase in the size of retail distributing businesses, due to amalgamations and other causes, has added impetus to this movement of mechanization in the dairy.

The increased use of machinery entails heavier original capital outlay in the running of the dairy, and also means that a larger proportion of current expenditure is represented by depreciation. Increased mechanization means increased depreciation charges and lower wages cost. Where the plant and machinery employed is small, and the cost of depreciation and renewals relatively unimportant, the adoption of an arbitrary depreciation rate covering all plant does not necessarily vitiate the accuracy of the accounts. But where plant and machinery is expensive, and includes many items of varying cost and length of life, the adoption of an accurate charge for depreciation is essential if the business is not to incur serious risk of running at a loss without the proprietors being aware of the fact until too late.

For these reasons a comprehensive plant register is essential in a modern dairy, so that an accurate computation of the depreciation charge can be made. The principal items of plant are—

1. Pasteurizing plant.
2. Piping and storage tanks.
3. Bottle-washing machine.
4. Churn washer and sterilizer.
5. Bottling and filling machines.
6. Separators and milk cleaners.
7. Coolers, compressors, refrigerators, etc.
8. Cheese vats.
9. Butter churns.
10. Boilers.
11. Conveyors.

The rate of depreciation to be employed will depend upon the nature of the plant and its estimated life. In view of the rapid development of machinery in dairying, and the speed with which existing plant becomes out of date, a high rate of depreciation is recommended so as to provide for any loss arising from obsolescence. Depreciation can be calculated as a percentage either of the original cost or of the Balance Sheet valuation at the beginning of the year. The former basis is considered more satisfactory for dairies, and the rates quoted below are calculated on the original cost of the plant.

For pasteurizing plant, a rate of from 10 to 12½ per cent per annum is recommended. Bottle-washing machines, bottling, and capping machines should bear a depreciation of not less than 12½ per cent. For the compressors and power plant 10 per cent depreciation should normally be sufficient, and a similar rate should be adequate for coolers. Separators and cleaning machines work at a high speed and are subject to higher depreciation, and 12½ per cent or more should be written off each year. Any electric motors employed should be depreciated at 15 per cent. Cheese vats and butter churns have longer lives, and (particularly the former) are not to the same extent subject to obsolescence. For these 7½ per cent in normal circumstances should be sufficient. Depreciation of boilers, piping and storage tanks is not usually large and 5 to 7½ per cent depreciation should be ample.

All depreciation rates are to some extent theoretical, and individual experience frequently belies the accepted standards. The depreciation of any machine is not entirely a question of years but depends upon the use made of it, and the care with which it is handled. These factors will vary with each business. For this reason the rates of depreciation should be

kept frequently under review to see that they are adequate and satisfactory. The plant register will show the value placed on each item at the end of each year, and from this information the adequacy of the rates can be checked from time to time.

Churns

The life of a churn is estimated to be from three to five years, but the difficulty in deciding the amount of depreciation arises, not on account of variations in the length of life, but because of the numbers of churns which are lost. Although churns may not have to be renewed because of wear at the end of three years, it is probable that a number of them will have to be replaced because of loss. The following methods of calculating depreciation on churns are suggested—

(1) The cost of all churns is debited to a Churn Account. When a Balance Sheet is being prepared, the stock of churns should be taken and valued. If the churns are numbered, and a record of each churn is made, the value of churns can be calculated by depreciating each set of churns according to age, on the basis of a four years' life. Thus new churns would be valued at cost price, churns of one year old at 75 per cent of cost price, two years old at 50 per cent of cost price, and so on. Any churns which are more than four years old should be valued at a nominal valuation. The difference between the value of the churns at stock-taking and the debit to the account, will represent the depreciation to be charged to Profit and Loss Account.

(2) When it is not convenient to ascertain the exact age of each churn, the same principle can be adopted as in (1) above, except that all churns will have to be valued at the same price as it will not be possible to distinguish between old and new churns. In these circumstances, the stock of churns will be valued at cost, less 30 to 50 per cent, and the balance on the account will be written off to Profit and Loss Account. The percentage to be written off the churns will depend on their general condition. If they contain a large proportion of churns in a good condition, 30 per cent would be an ample deduction, while if many of them require replacement the rate to be adopted should be 50 per cent.

(3) The original cost of the churns can be capitalized and written off over a period of five years, and all renewals charged to revenue. This method tends to result in excessive depreciation being charged but is suitable for a business starting with a new

set of churns. It is reasonable to leave a balance on the Churn Account, of say 25 to 33 $\frac{1}{3}$ per cent of the original cost, as there is undoubtedly some value in this asset, and it is not strictly accurate to write it off entirely.

The Control of Churns

In a large dairy where the churns are numerous, some form of accountancy control should be instituted to maintain a check on the movements of the churns, so as to locate and prevent losses. The ideal system, of course, would be to record on invoices and churn labels, etc., the movements of each churn. By this means a record would be available of the location of each churn, and this record could be checked with a physical inventory at frequent intervals. In practice such a system is not possible, and, in fact, most dairies have very little check of any kind. The following alternative methods are suggested whereby some measure of control over the churns can be exercised—

(1) Each churn is numbered and a churn register kept showing the numbers of each churn in stock. At certain intervals (say monthly or every second month) the stock should be taken by recording on Churn Lists (see Fig. 26) the whole of the stock passing through the dairy. Any churns found to be missing will be inquired about, and an effort made to trace them.

(2) Each farmer has a set of churns which are specially marked, allocated to him for his milk. If it is found that one farmer or customer has a disproportionate number of losses, appropriate action can be taken. This method has its drawbacks as it is often difficult and inconvenient to keep a set of churns for the use of one particular farmer, but the system is found convenient in some dairies, and has the advantage that any losses are located.

Bottles and Crates

Bottles and crates are even more difficult than churns to control, particularly the former on account of the breakages. Although a complete control is not practicable, some form is desirable if it is hoped to keep a check on the breakages and losses.

The best method is to charge and re-credit each roundsman with the bottles and crates he takes out and returns. This does not present any serious accounting difficulty as the numbers of bottles and crates can be calculated at once from the quantities

of milk sent out. Provision should be made on the roundsman's ticket (see Fig. 8) for the insertion of bottles and crates, and the numbers returned will be checked in and recorded by the foreman when the roundsman reports to the dairy. From these tickets the Bottle and Crate Register (see Fig. 27) should be written up showing the numbers to be accounted for by each man. There is bound to be a deficiency of bottles over a period, but, after making a reasonable allowance for unavoidable breakages, the register will show which roundsmen are responsible for the biggest losses. In considering deficiencies, it must be remembered that the stock of bottles in the hands of customers depends on the size of the round, and when rounds are developing, the apparent increase in the deficiency represents really a larger stock held by customers. Further, it must be remembered that customers are largely responsible for losses and breakages, although a good roundsman can by care reduce the number of the former.

For Balance Sheet purposes the value to be placed on bottles and crates can best be arrived at by stock-taking. Many dairies write off to Profit and Loss Account, irrespective of any variations in stock, the whole of the cost of bottles and crates, with the exception of the original cost. This is not strictly accurate when a business is expanding, as the stock of bottles and crates must obviously increase with it; nor is it accurate when some change in the method of distribution or alteration of the number of deliveries causes either an increase or a reduction of the number of bottles employed per customer. Apart from these considerations, the charging of all renewals against profits is not an unsatisfactory method.

It is not practicable to take stock of bottles and crates by actual count. The number in hand can be calculated only by reference to the number of bottles of milk sold per day and the stock of bottles required to sell each pint of milk.

Stocks

The stock of milk held by a dairy concern is never very large and will not normally exceed one day's supplies. Stocks of dairy products, groceries and sundries may be large, but these should not present any problems of valuation except in so far as dairy products on hand have been produced, and not purchased, and the cost of acquisition is not readily ascertainable. Cheese stocks are the principal example of this, as it is necessary to hold cheese for some time, and the stock in hand is likely to be considerable.

BOTTLE AND CRATE REGISTER

WEEK ENDING.....193..

	SUNDAY		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY		TOTAL		LOSSES	
	Bottles	Crates	Bottles	Crates	Bottles	Crates	Bottles	Crates	Bottles	Crates	Bottles	Crates	Bottles	Crates	Bottles	Crates	Bottles	Crates
ROUND No. 1	OUT																	
	IN																	
2	OUT																	
	IN																	
3	OUT																	
	IN																	
4	OUT																	
	IN																	
5	OUT																	
	IN																	
6	OUT																	
	IN																	
7	OUT																	
	IN																	

Fig. 27

Where accurate cost accounts are kept, the cost of producing the cheese can be ascertained, and this value, provided it does not include delivery and selling expenses, can be used for Balance Sheet purposes. Any stock which has deteriorated will not be valued at this price, nor will this basis be adopted where the actual selling price has fallen below cost.

In practice, most cheese-makers value the stock in hand according to the current price for the type of cheese they are making. A deduction is made from the current selling price to reduce to approximate cost price and to provide for selling and distribution expenses and contingencies.

Motors, Vehicles, Horses, Etc.

Every retail dairy will include among its assets vehicles of some kind for the delivery of milk. Where both horse and motor transport are being used, the capital cost of these should be segregated, as the depreciation rates to be employed will differ. For commercial motor vehicles 20 per cent per annum depreciation should be provided, while for the other vehicles 10 to 12½ per cent should be sufficient. Horses, for Balance Sheet purposes, are usually dealt with on the basis of re-valuation.

Dairy Equipment

There are many items of equipment in a dairy which are often too small to be included in the Plant Register, e.g. American knives for cutting cheese, laboratory utensils, etc. The original cost should be capitalized and depreciated at 10 to 15 per cent per annum, while renewals should be charged to Profit and Loss Account.

CHAPTER XI

DISTRIBUTION COSTS

IN the last thirty years there have been many changes in milk distribution, and not the least of these is the development of various methods of processing milk by the distributor before it is delivered to the consumer. Previously, milk was sold in the same state in which it was received from the farmer. To-day it may go through several processes in the hands of the distributor before sale, and reach the consumer as what might well be termed a semi-manufactured product. The pasteurization of milk is now common in all dairies supplying large towns, while in the last ten or fifteen years there has been a very large extension of the use of bottles and to a less degree of cartons. This change in the nature of the dairy trade has been gradual, and has not always been reflected in the accountancy systems of dairy companies. Many distributors carry on their businesses as if they were still entirely trading organizations instead of semi-manufacturers, and, consequently, have not given adequate attention to the question of cost accounts. It is proposed in this chapter to consider the preparation of a cost statement for milk distributors, and to discuss the various technical accounting problems which arise.

The type of costing required for a dairy business is what is technically known as Single Cost Accounting. Single costing is used when the output can be described by reference to one unit of production to which all expenses can be related. In the case of milk distribution this unit is a gallon of milk sold.

Objects of Costing

The objects of the costing system are twofold—

- (1) The ascertainment of the cost per unit of output of each of the various processes through which the milk is passed.
- (2) Where the milk passing through the dairy is not all subject to the same processes, or where other goods are sold, the allocation of expenses so that the final cost of each kind of milk and of the handling of goods is known.

For the purposes of simplicity it is proposed to discuss first the problems which arise in a dairy where all the milk sold is

subjected to the same processes. Fig. 28 is the Profit and Loss Account of a dairy showing the financial results of carrying on a business for a year. This shows the expenditure of the business allocated according to its type. The same expenditure allocated according to production will give a Costing Statement.

If all the expenditure could be allocated direct to the various cost headings, the preparation of a Cost Statement would present no greater difficulty than arises when a Profit and Loss Account is prepared. The Cost Statement would in effect be the debit side of the Profit and Loss Account with the expenditure set out in a different form, and would be obtained direct from the Nominal Ledger.

In practice only part of the expenditure can be charged direct to cost account headings, and the rest must be allocated according to some agreed basis. It is essential that these allocations should be made in accordance with sound costing principles if the Cost Statement is to be reliable and of use, and it is in connexion with these allocations that the chief accounting difficulties arise.

The first step in the preparation of the Cost Distribution Statement is compilation of the Distribution Cost Analysis Sheet. On this sheet the expenses charged to the Profit and Loss Account are re-allocated according to the cost headings. An example of a Distribution Cost Analysis Sheet is given in Fig. 29 where the following cost headings are employed. The principles on which the allocations have been made are discussed below—

Other Goods.

Receiving and Handling.

Pasteurizing and Bottling.

Bottle-washing and Sterilizing.

Cold Storage.

Collection.

* Delivery and Selling Expenses.

* Supervision.

* Establishment Charges.

* Steam and Power.

* Shops.

Further re-allocation is made of the last five items on this list so that the full cost of the main production divisions can be obtained. After this final allocation the Distribution Cost Statement shown in Fig. 30 can be prepared.

THE X DAIRY

TRADING AND PROFIT AND LOSS ACCOUNT

		<i>Pence per Gallon</i>	<i>Gallons</i>	<i>£</i>	<i>s.</i>	<i>d.</i>
1936						
Jan. 1	To Stock		4,714	4,187	14	3
Dec. 31	„ Milk Purchases	15.10	1,418,632	88,216	11	8
	„ Other Purchases	11.72		26,941	1	4
	„ Gross Profit carried down			68,486	13	7
			<u>1,423,346</u>	<u>£187,832</u>	<u>0</u>	<u>10</u>
		<i>Pence per Gallon</i>				
Dec. 31	To Dairy Wages	1.24		7,196	14	2
	„ Fuel, Coal and Coke	0.11		636	11	6
	„ Water	0.06		348	3	11
	„ Power	0.05		298	17	3
	„ Rent and Rates	0.44		2,566	4	11
	„ Cleaning	0.02		117	12	0
	„ Milk Testing Expenses	0.04		233	16	2
	„ Roundsmen's Wages	2.59		15,138	8	11
	„ Roundsmen's Commission	0.53		3,096	11	1
	„ Motor Expenses	0.73		4,268	1	5
	„ Horse-keep and Stable Expenses	0.96		5,604	14	3
	„ Bottles, Discs, Cartons and Crates	0.66		3,859	19	1
	„ Repairs to Plant	0.05		294	13	7
	„ Repairs to Vehicles	0.06		353	14	0
	„ Repairs to Buildings	0.03		178	11	1
	„ Petrol and Oil	0.40		2,358	1	6
	„ Management and Clerical Salaries	0.55		3,207	4	11
	„ Printing, Stationery, Postage, etc.	0.08		463	11	5
	„ Legal and Professional Charges	0.04		239	4	1
	„ Advertising	0.07		408	3	6
	„ Canvassers' Wages and Expenses	0.60		3,510	0	8
	„ Bad Debts	0.10		589	10	3
	„ Insurance	0.07		409	15	0
	„ Telephone	0.03		174	13	1
	„ Lighting and Heating	0.04		238	1	8
	„ Trade and Office Expenses	0.07		361	0	2
	„ Depreciation—					
	Buildings	0.05		296	2	5
	Plant	0.35		2,135	8	0
	Vehicles and Motors	0.16		936	1	7
	Churns	0.05		296	3	1
	„ Net Profit for the Year	2.38		13,873	15	2
			<u>12.61</u>	<u>£73,689</u>	<u>9</u>	<u>10</u>

Fig.

DISTRIBUTION COST ANALYSIS SHEET

Nature of Expense	Total Expenditure	Oils & Greases	Reserving and Handling	Pasteurizing and Bottling	Bottle Washing and Sterilizing	Cold Storage	Collection of Milk	Delivery & Selling Expenses	Supervision	Establishment Charges	Steam and Power	Shops
	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
Dairy Wages	7,190 14 2	98 11 4	2,431 9 6	864 3 1	1,042 1 8	497 13 5	741 18 2				247 18 10	583 16 2
Fuel, Coal and Coke	656 11 6										533 3 1	103 8 5
Water	346 3 11		34 16 5		34 16 5						278 11 1	
Power	258 17 3										268 17 3	
Rent and Rates	2,566 4 11	185 10 9	185 16 9	669 0 4	171 13 6	185 16 9					74 6 9	893 14 1
Cleaning	117 12 0	11 1 4	13 1 4	47 0 10	26 2 8	13 1 4					5 4 6	
Milk Testing Expenses	233 10 2		233 16 2									
Roundsman's Wages	15,138 8 11							15,138 8 11				
Roundsman's Commission	3,090 11 1							3,090 11 1				
Motor Expenses and Repairs	4,268 1 5						1,803 4 11	2,464 16 6				
Horse-keep and Stable Expenses	5,064 14 3							5,064 14 3				
Bottles, Discs, Cartons, and Crates	3,859 19 1			3,859 19 1								
Repairs to Plant	294 13 7		17 3 1	182 8 2	79 12 0	12 4 3					3 6 1	
Repairs to Vehicles	353 14 0							353 14 0				
Repairs to Buildings	178 11 1	10 10 9	10 10 9	71 8 7	39 13 6	10 10 9					7 18 9	
Petrol and Oil	2,358 1 6						1,007 14 5	1,350 7 1				
Managerial and Clerical Salaries	3,207 4 11								2,136 4 2	1,071 0 9		
Printing, Stationery, Postage, etc.	413 11 5									413 11 5		
Legal and Professional Charges	239 4 1									239 4 1		
Advertising	408 3 6									408 3 6		
Canvassers' Wages and Expenses	3,510 0 8											
Bad Debts	590 16 3							3,510 0 8				
Insurance	400 15 0							590 16 3		400 15 0		
Telephone	174 13 1									174 13 1		
Lighting and Heating	258 1 8									186 0 10		52 0 10
Trade and Other Expenses	301 0 2									301 0 2		
Depreciation—Buildings	266 2 5	1 18 0	32 18 0	118 0 0	65 16 2	32 18 0					13 3 3	
Plant	2,135 8 0		271 4 11	415 3 0	597 11 1	185 17 9					84 1 2	88 10 1
Vehicles and Motors	930 1 4						528 11 1	407 10 3				
Churns	260 3 1		260 3 1									
Interest on Buildings	502 4 10	66 16 0	65 10 0	246 18 1	131 12 4	65 16 0					26 6 5	
Plant	853 10 2		76 14 11	394 9 0	253 4 8	86 4 6					53 6 1	
Vehicles and Motors	268 11 1						119 17 11	148 13 2				
Churns	58 14 3		58 14 3									
Bottles	134 11 1				134 11 1							
Stock	213 17 7	100 16 1	15 1 6									
Allocation of Supervision	160,937 18 5	13,514 18 4	13,555 12 8	17,348 10 2	12,766 15 1	11,000 8 9	14,401 6 6	132,604 12 2	2,236 4 2	13,313 8 10	11,620 3 4	11,731 9 7
	— — —	291 5 2	662 4 8	250 9 8	309 5 1	147 10 4	220 4 9		2,236 4 2		73 11 8	173 6 10
Allocation of Steam and Power	160,937 18 5	13,514 18 4	14,217 17 4	17,065 8 10	13,076 0 2	11,247 5 1	14,401 11 3	132,604 12 2	— — —	13,313 8 10	11,609 14 11	11,804 16 5
Establishment Charges (1)		613 14 0		622 12 8	1,010 0 10	58 1 5					1,009 14 11	
Delivery and Selling (2)		472 4 6						4,872 4 6				
Shop Expenses (3)		1,551 10 3										1,551 10 3
	160,937 18 5	13,514 18 4	14,217 17 4	18,228 1 6	14,095 1 0	11,305 6 6	14,401 11 3	137,732 7 8	— — —	12,699 14 10	— — —	12,411 6 2

NOTES (1) Allocated on basis of total sterling value of sales.
(2) " " " " " " rounds sales
(3) " " " " " " shops sales.

CO. LTD.

FOR THE YEAR ENDED 31st DECEMBER, 1936

1936			<i>Pence per Gallon</i>	<i>Gallons</i>	<i>£</i>	<i>s.</i>	<i>d.</i>
Dec. 31	By Sales—						
	Milk	25.51	1,402,811	149,123	18	5	
	Sundries			33,865	3	2	
	„ Wastage		16,348				
	„ Stock		4,187	4,842	19	3	
			<u>1,423,346</u>	<u>£187,832</u>	<u>0</u>	<u>10</u>	
			<i>Pence per Gallon</i>				
1936							
Dec. 31	By Balance brought down	11.72	68,486	13	7		
	„ Discounts received	0.02	117	3	11		
	„ Collection Charge received	0.87	5,085	12	4		

12.61£73,689 9 10

Wages

A considerable portion of dairy expenditure is accounted for by wages which for costing purposes must be subdivided according to the nature of the work performed. In most factories outside the dairy industry the allocation of wages for costing is based on the time records kept by the men. In a retail dairy, however, it is possible to avoid the trouble and expense of time

DISTRIBUTION COST STATEMENT

FOR THE YEAR ENDED 31ST DECEMBER, 1936
GALLONS OF MILK SOLD 1,402,811

		£	s.	d.	Pence per Gallon
Sales		149,123	18	5	25·51
Cost of Milk		88,249	6	7	15·11
Dairy Expenditure—					
Receiving and Handling		4,217	17	4	0·72
Pasteurizing and Bottling		8,228	1	6	1·41
Bottle-washing and Sterilizing		4,095	1	0	0·70
Cold Storage		1,305	6	6	0·22
Delivery and Selling Expenses		27,732	7	8	4·74
Shop Expenses		241	6	2	0·04
Establishment Charges		2,699	14	10	0·46
		£136,769	1	7	23·40
Collection Charge received	£5,085 12 4				
Less Cost	4,481 11 3				
		604	1	1	0·11
		£136,165	0	6	23·29
Net Profit		12,958	17	11	2·22
		£149,123	18	5	25·51
Gross Profits on Goods		7,729	5	8	1·32
Expenses		8,936	12	2	1·52
NET LOSS		£1,207	6	6	0·20

Note. The Net Profit above differs from that shown in Fig. 28, by £2,121 18s., being interest included in the Cost Statement.

Fig. 30

sheets as the duties carried out by the various men are usually fairly well defined, and each man's wages can be allocated to various processes according to his normal duties, which will not usually vary from week to week. The men employed on distribution are occupied entirely on this work, and there is normally

no question of any of their wages being attributable to any other process. It should be possible to arrive at a fair allocation of the wages of men employed in the dairy from information supplied by the yard foreman, or as a result of the use of time sheets for a limited period. As the duties of the various men may on occasions be altered, it is advisable for the cost allocation to be checked from time to time. Subject to this, the allocation of wages for the Cost Accounts can be made in the Wages Book itself, preferably by grouping in this book the various men's wages according to the processes to which they are to be charged.

Supervision

The wages of the yard foremen and the dairy manager cannot be apportioned direct to any particular process but should be allocated in the same proportions as the total wages. This allocation is made on the recognized assumption that supervision varies directly with the number of men employed, and to avoid unnecessary calculations, the wages figures are accepted as a basis of allocation instead of the actual hours worked.

When supervisors are employed for controlling the roundsmen their wages and expenses will represent a direct charge to Delivery Costs. In this event Delivery Costs should not bear the same proportion of the dairy manager's salary as they would if no rounds supervisors were employed.

Dairy Expenses

The dairy establishment expenses such as rent, rates, cleaning, repairs and depreciation of buildings, etc., should be allocated to the various cost headings on a basis of the space occupied in the carrying out of each process. Depreciation of plant should be allocated according to the plant used in each department, the information necessary to make this allocation being obtained from the Plant Register. Depreciation of churns should be included in the cost of receiving and handling, while repairs to plant should be allocated according to the nature of the plant which has been repaired.

Water

Water is an important item in the dairy and should be allocated to the processes concerned in the estimated proportions in which it is used. The particular cost headings affected are steam, receiving and handling, and bottle-washing.

Other Expenses

So far as possible, expenses which are directly applicable to any cost heading will be allocated to that process; for example, coal and coke will be allocated to steam; bottles, etc., to bottling; horse-keep, repairs to prams, etc., to distribution; milk testing and laboratory expenses to receiving and handling. If motors are used entirely for distribution the total motor expenses can be charged to this heading, but if the motors are also used for collection an allocation between these two headings will be necessary. In practice this will not present very serious difficulties because the vehicles used for collecting the milk will not be the same as those used for house to house delivery. Where this is not so, and some vans are employed in both collection and delivery, the allocation must be in accordance with the use made of the vans for each of these two purposes.

Interest

Cost accountants differ in their opinions as to the advisability of including a charge for interest in cost accounts. Some argue that if the expense has not in fact been paid out by the business it does not represent an expense which should be included in the cost, while others maintain that unless it is included the true costs of production are not being ascertained. In view of the extent to which dairies have become mechanized in recent years, resulting in large outlay for plant, it seems advisable that the interest factor should not be entirely ignored. Many expensive plants introduced to effect a saving may not in fact have achieved this if a proper charge is made for the capital locked up, and it is information of this kind that the cost accounts are intended to convey.

The allocation of the charge for interest will follow that of the plant, or buildings, on which it is based.

Milk

The cost of milk itself is subject to special considerations. A reduction in price is not within the scope of normal dairy administration, as the cost is generally fixed by collective bargaining. In so far as the cost of milk includes wastage it is not advisable to leave it out entirely from the cost statement, as if this is done the distribution costs will not record the full expense of distribution. Two alternative methods are therefore possible—

(a) The total price of all milk purchases after adjusting stocks will be divided by the total number of gallons sold to obtain the cost per gallon. As some wastage will have occurred, the net cost per gallon of milk in the Cost Statement will be slightly in excess of the purchase price per gallon. For example, if a dairy buys 1000 gallons of milk at 1s. 5d. and wastage is 1 per cent the total milk cost of the 990 gallons sold is £70 16s. 8d. ($1000 \times 1s. 5d.$) and the cost per gallon is 1s. 5 $\frac{1}{2}$ d. (i.e. £70 16s. 8d. \div 990).

(b) The alternative method is to endeavour to locate wastage to the particular process in which it occurs and to include it as part of the expense of that process. This means that milk must be measured before pasteurizing, after pasteurizing and after bottling. In all but the largest dairies the time and cost of this additional measuring and recording does not justify the greater accuracy obtained. As the milk issued to roundsmen is recorded for control purposes, it is possible to distinguish loss and wastage in the dairy from loss and wastage on the rounds, but for practical purposes the further allocation of wastage in the dairy is not advisable as a permanent feature to the cost accounting. When the dairy wastage is high and gives cause for some concern, special tests should be made on certain days for the purpose of ascertaining in what process the wastage is taking place.

Goods

The sale of other goods plays an important part in many dairy businesses. It is essential for accurate costing that a fair allocation of expenses should be made between milk and goods.

The allocation of certain expenses presents no serious difficulty. Goods should be charged with such expenses as are directly applicable to their sale, such as wages of men handling the goods in the dairy, interest on stocks, and the share of dairy establishment charge proportionate to the area occupied in storing and handling. The real difficulty arises in considering what proportion of general establishment charges and of delivery expenses should be allocated to goods.

Many dairies make the allocation of expenses of this kind between milk and goods, on the basis of turnover. This basis is adopted from considerations of expediency rather than on grounds of theoretical accuracy. Many factors, in practice, influence the relative costs of distribution of different products by the same manufacturer, but the correct allocation of distribution costs to

products has only in recent years attracted the serious study of accountants in this country. As the result of an investigation into the subject carried out on a strictly scientific basis by the Department of Business Administration of the London School of Economics (University of London) the following were found to be some of the more important factors determining selling and distribution costs¹—

- (1) The value of the stock carried.
- (2) The volume of floor space occupied by the stock carried, and the extent of the attention needed.
- (3) The bulk, weight, and character of the goods.
- (4) The nature of the demand for the goods.
- (5) The distance of the market from Headquarters.
- (6) The number of transactions (as distinct from the value of sales) determine clerical expense.
- (7) Selling price, once the scale of rates has been fixed, determines salesmen's commissions.

Items 1 and 2 in the case of dairy business can be accounted for without difficulty, while item 5 does not affect the relative costs of milk and goods. Full weight should be given to the other factors, however, before the allocation of establishment and delivery expenses between milk and goods can be considered to be on a scientific basis. The circumstances in each business will differ according to the nature of the trade carried on.

Shops

No great difficulty should be experienced in allocating to shops the expenditure directly attributable to them, because they will normally be situated some distance from the dairy and their expenses will be clearly defined. Where a shop is part of the dairy the allocation of the rent, rates, and other establishment expenses on the basis of space occupied may not necessarily be correct, because a front site occupied by a shop may be relatively of greater value than a corresponding area in some other part of the dairy. No fixed rule can be laid down and the allocation must depend on all the circumstances of the case. If necessary, the amount attributable to the shop may be calculated by reference to the cost of similar shop properties in the vicinity.

¹ *Note.* For further particulars see "Distribution Costing" by Brian Magee, B.Com., A.C.A., in the *Accountant*, 7th, 14th, and 21st October, 1933.

In many dairy businesses the shops often perform services such as the receiving of orders, the replenishing of roundsmen's supplies, and the handling of complaints. In preparing the Cost Statement these facts should not be overlooked when determining the basis of allocation of shop expense between milk and goods.

Power and Steam

The total cost of the steam and the power must be re-allocated to the other processes in proportion to the use which they make of these services. The basis of allocation will depend on the nature of the plant employed and the use made of these facilities in each of the various processes.

Costs where Output is Not Uniform

Where a dairy is selling more than one kind of milk, e.g. raw, pasteurized, sterilized, in bulk, etc., the cost per unit of production (i.e. per gallon) cannot be obtained by dividing the total gallonage into the total cost for each item. It is necessary in this case to keep gallonage records of each class of milk. For costing purposes the allocations to the various cost headings will continue as before, and the whole of the expenses will be allocated in this manner. To obtain the cost per gallon of each process the total expense should be divided, not by the total gallons sold, but by the total gallonage subjected to that process. The cost per gallon of any particular type of milk will be obtained by preparing a further statement in the form of Fig. 31 in which is totalled the cost per gallon of all expenses attributable to each type of milk.

Delivery Costs

It is customary in the dairy trade, as in many others, to sell at reduced prices for larger quantities. These price concessions are made on the assumption, which is true, that when larger quantities are taken, delivery costs per unit are reduced. It should not be overlooked, however, that this reduction in costs can only apply to delivery expenses, as the costs of pasteurizing, sterilizing, and bottling are the same whether the milk is sold in small quantities or in large. For this reason it may be profitable in certain businesses to consider how far the prices received for semi-wholesale sales do in effect represent profitable transactions.

The actual expenses incurred on this milk can be ascertained to see whether or not the price received does allow a margin for profit. For example, from the figures shown in Fig. 30 it will be seen that any milk which has been pasteurized and bottled costs 18·55d. per gallon without making any allowance for delivery. The delivery costs of semi-wholesale sales of milk can be ascertained by dividing the costs per round by such figure as can be sold on the round if the whole of the customers on that round are buying in bulk quantities. For example, if the average round of a business is 40 gallons per day and the cost of distribution is 2·5d. per gallon, and if by selling in larger quantities the

COST STATEMENT FOR GRADED AND OTHER MILKS

	Raw Milk	Pas- teurized Loose	Pas- teurized in Bottles	Steri- lized	Certi- fied
Cost of Milk . . .	15·11	15·11	15·11	15·11	21·61
Receiving and Hand- ling . . .	0·72	0·72	0·72	0·72	0·72
Pasteurizing . . .	—	0·83	0·83	—	—
Bottling . . .	—	—	0·58	0·58	—
Bottle-washing . . .	—	—	0·97	0·97	—
Sterilizing . . .	—	—	—	1·31	—
Cold Storage . . .	0·22	0·22	0·22	0·22	0·22
Delivery Expense . .	3·43	3·43	3·43	3·43	3·43
Establishment Expenses . . .	0·46	0·46	0·46	0·46	0·46
TOTAL COSTS .	19·94	20·77	22·32	22·80	26·44

Fig. 31

amount sold per round would not exceed, say, 120 gallons per day, it is obvious that it must cost 0·833d. per gallon to deliver milk in these larger quantities.

Many semi-wholesale sales are made at prices which would show a loss if judged by the figures in the cost statement. Most dairymen would justify these sales on the grounds that they contribute something towards the establishment charges of the business, and thus, although they do not bear their fair share of expense, they succeed in reducing the general cost per gallon.

This no doubt is true, but it is equally certain that many dairy-men are quite unaware of the true effect of these sales. Although the price realized for semi-wholesale sales is to a large extent governed rather by what can be obtained than by considerations of actual cost, there is no doubt that it cannot but be of interest and advantage to dairy managers to know exactly the effect of such price reductions.

CHAPTER XII

MANUFACTURING COSTS

MANY dairies manufacture into milk products only the surplus of their milk over liquid requirements. Manufacture of this kind is only incidental and is carried on so that the liquid requirements can be balanced and the surplus milk used to the best advantage. Prior to the establishment of the Milk Marketing Board manufacturers were liable to make a loss on any milk converted because the price realized for the sale of the manufactured product did not recompense them for the cost of the milk and the expenses of manufacture. In fact any loss on conversion was considered as part of the cost of distribution because the existence of a surplus is necessary if adequate supplies are to be available to meet the varying demands of the liquid market. Now that the Milk Marketing Scheme is in operation, persons requiring milk for manufacture can obtain that milk at considerably reduced prices as it is surplus to the liquid requirements of the country. This has put the manufacture of milk products on a sounder basis and has made possible a considerable extension of milk manufacture.

In this chapter it is proposed to discuss the principles of cost accounting applicable to a dairy concerned primarily with the manufacture of milk products, and whose outlet for liquid milk is small and relatively unimportant.

One of the difficulties of production in a factory manufacturing dairy products arises on account of the variations in the input of milk to the factory. A dairy buying milk for manufacture, contracts to take the whole of the supplies of a certain group of farmers. Twice as much milk may be produced during the early summer than is produced in midwinter and it is, therefore, necessary to have sufficient plant to be able to cope with the maximum quantity which may be received, although during a large part of the year the factory will not be working to capacity. In most factories outside the dairy industry the management is able to control activity and to spread the work so as to eliminate or reduce the effect of seasonal peaks. In a dairy, as milk must be dealt with on the day on which it is received, the whole activity of the factory depends on the input of milk received.

A dairy may be concerned with the manufacture of one product only, such as cheese, butter, condensed milk, milk powder, etc., or several products may be manufactured at the same time. If only one product is manufactured, the costing problem is simple because all expenses of the dairy will be attributable to the same type of production. The cost per unit of production is obtained by dividing total expenditure by the number of units produced.

Cost Divisions

When more than one product is manufactured, sound costing principles must be applied, so that expenditure is correctly allocated to each product. If the allocations are not accurately made, there will be a grave risk of the cost of one of the products being understated at the expense of the others. Certain expenditure and processes will be common to the manufacture of all products, for example, pasteurizing costs when all the milk is pasteurized, and establishment charges; other processes may apply to some products only, for example the cost of separation must be allocated between cream and butter making. All expenditure will ultimately be allocated to the products, but some will first be charged to the subsidiary cost headings and afterwards re-allocated.

To obtain the cost of each product manufactured the total expenditure shown by the Profit and Loss Account must be re-allocated. For this purpose, a Cost Analysis Sheet, similar to Fig. 29, is necessary. A typical classification of expenditure in the case of a manufacturing dairy is as follows—

- (a) Cheese.
- (b) Butter.
- (c) Cream.
- (d) Liquid Milk—Handling and Distribution.
- (e) Receiving and Handling.
- (f) Factory and Office Oncosts, including Supervision and Management.
- (g) Establishment Expenses.
- (h) Steam and Power.

The last four headings are subsidiary classifications and the total expenditure allocated to each of these groups should be re-allocated to the main product classifications. By this means the total expenses of manufacture of each product are obtained. The cost per unit of production is obtained by dividing the total

expenses allocated to each product by the number of units produced.

Various difficulties arise in connexion with the allocation of expenses to the costing classifications and the re-allocation of the subsidiary classifications to the products, and these are discussed below.

Wages

The allocation of wages cannot be satisfactorily made in a manufacturing dairy unless time sheets are kept by each man employed. If necessary, these can be made out by the foreman at the end of each day, but it is preferable for them to be made out by the men and scrutinized by the foreman before being passed to the office. It is possible in certain factories, where the duties carried out by each man are the same from week to week, for the allocation of wages to be made on a basis of one or two test weeks. Generally, there are likely to be certain variations in the duties to which adequate effect will not be given unless time sheets are kept.

The wages charged to cheese should include all costs of handling, turning, and storing. Receiving and handling will include all expenses which are applicable to all the milk which is received, including milk testing done to ascertain the purity and the quality of the milk, but not, of course, milk testing in connexion with the manufacture of cheese.

Stores

Besides milk, certain quantities of other materials, e.g. rennet, annatto, salt, packing materials, etc., are used in manufacture. When these materials are used for one product only, the cost of the materials can be allocated to that product. If any particular material, e.g. annatto or salt, is used for more than one product, it is necessary to provide for the allocation of this item to the different products. This can be done by use of stores requisitions, which will be made out as the stores are issued to the various departments; or, alternatively, statistical records can be kept by the butter-maker and cheese-maker of the quantities used and these can be agreed with the quantity consumed, at the end of each month. The quantity of each material used should vary directly with the gallonage of milk manufactured, and therefore it is easy to calculate each month whether the consumption of rennet, salt, etc., has been excessive or not. If it is found

that some leakage is occurring, steps should be taken to find out where.

Milk

The cost of milk should be allocated to the various products on the basis of gallonage records prepared from the Production Return. If any wastage occurs it should be allocated to the products, according to its nature, e.g. if wastage is due to pasteurizing it will be allocated on the gallonage basis to those products the milk for which is pasteurized before manufacture. The price paid for the milk will vary according to the product manufactured and the charge to each product will be at the appropriate manufacturing price.

Factory Supervision

The allocation of this expenditure to the products can be on one of three bases, viz. on wages cost, labour hours, or milk gallonage. The disadvantage of using milk gallonage as a basis is that no proportion of the supervision is charged to steam and power. In certain factories, e.g. where powder is made, several men may be employed in the Boiler Department, and some charge for supervision should be included as part of the cost of steam. For practical purposes, wages cost is recommended as the most suitable basis of allocation.

Establishment Charges

Establishment charges include rent, rates, taxes, insurance on building, depreciation, repairs, and interest on the capital value of the building. The total of these charges should be re-allocated first, so that a proportion of the expense is included in steam and power, receiving and pasteurizing, before these latter are re-allocated to the various products.

The activity of a dairy is much greater in the summer months than in the winter. If the total establishment charges were allocated between the two seasons equally, the costs of production in the winter months, when output is lower, are bound to be higher than in the summer months, when the output is high. In order to equalize the two seasons, it is usual to charge a larger proportion (e.g. two-thirds) of the establishment charges to the six summer months, leaving only one-third as applicable to the six winter months. If monthly costs are prepared, a plan can be

drawn up whereby each month is weighted with a proportion of the establishment charges, so that the total establishment charges for the year are allocated, although each month does not necessarily bear one-twelfth of the total expenses.

Steam and Power

Steam and power must be allocated to the products according to the use made of these services by each department, the apportionment depending upon the circumstances in each particular case.

Receiving and Handling

All expenses in connexion with handling the milk will be allocated to the products on the basis of milk gallonage used. Any profit made on collecting charges can be deducted from this heading before the allocation is made.

Cold Store

Where the cold store is used for more than one product, e.g. cream and butter, it will be necessary to classify the expense of the cold store separately, and to re-allocate the total cost between these two products. If the cold store is used for one product only, the total cost can be charged direct to that product.

By-products

The net proceeds of the sale of whey and separated milk should be credited to the product from which they arise. Any expense incurred in the disposal of a by-product, e.g. the cost of whey destruction, should form part of the cost of manufacture of the product from which the by-product is derived.

Where by-products are processed, e.g. if separated milk is dried or condensed, the question arises as to how much of the original milk cost should be allocated to the by-product. Two alternatives are possible, viz. (1) to charge an amount estimated to be the market value of the by-product, or (2) to make no charge at all. The second alternative is recommended because it records the position more clearly. Only expenses necessarily incurred in connexion with the processing and disposal of the by-product are charged to the By-product Cost Account. The profit shown represents the realization value of the by-product and can be compared with the price obtainable if the product had not been

processed. If a loss is shown, it becomes evident that processing should be discontinued.

In some businesses, the by-products represent an important part of manufacture. Many factories have large drying plants for separated milk, and a considerable amount of expense is incurred in making a satisfactory separated milk powder, and obtaining a remunerative market. The costing of the by-product will be carried on in the same way as if it were a primary product except that nothing should be included for the cost of the milk.

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ACCOUNTANTS AND AUDITORS, DECEMBER, 1893.

SIXTH EDITION.

Revised and Enlarged.

PRICE: TEN SHILLINGS NET.

LONDON :

SWEET & MAXWELL, LIMITED, 3, CHANCERY LANE,
W.C.

1936

LONDON:
PRINTED BY T. WHITTINGHAM & Co. LTD.
50, SOUTHWARK BRIDGE ROAD,
LONDON, S.E.1.

PREFACE TO SIXTH EDITION.

IN this Edition a chapter has been added dealing with Control Accounts supplemented by specimen workings showing how these accounts are constructed. The figures used are directly related to the accounts in the appendix, and thus show clearly the working of the control system. In addition the text of the book has been revised throughout. In some respects it has been amplified and in one or two instances alterations have been made to bring the book into accord with present-day practice.

W. S.

34-36, GRESHAM STREET,
LONDON, E.C.

PREFACE TO FIRST EDITION.

THIS book does not profess to be an exhaustive treatise on Cost Accounts. It has been written with a twofold object. In the first place, it is hoped that it may fall into the hands of manufacturers and be the means of helping them to realise the advantages to be reaped from the adoption of a proper system of Cost Accounts. Generally speaking—there are of course notable exceptions—it is an undoubted fact that there is great need of a fuller appreciation of those advantages, and it is one of the duties which

professional accountants owe to their clients to see that they do not remain uninformed as to the means within their reach of obtaining information which must prove invaluable to them.

It is hoped that the short statement as to the benefits of Costing, given in the opening chapter, may be of service to professional accountants in introducing the subject to their clients, and that the book as a whole may be sufficiently intelligible to the lay mind to convey a general idea of how the results are achieved.

The second object of the work is to give a general outline of the methods of keeping Cost Accounts applicable to different classes of manufactures, for the benefit of Accountant Students and of others engaged in accountancy who are not already conversant with the subject. The endeavour has been to adhere chiefly to leading principles, leaving details to be supplied according to requirements and circumstances by the accountant who is employed to initiate the system.

It is felt that the only case in which a detailed description of a system is of any real value is where some particular industry is taken as a basis, and a set of accounts specially applicable to that industry actually worked out and explained.

W. S.

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